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Would you choose to be happy? Tradeoffs between happiness and the other dimensions of life in a large population survey

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ABSTRACT

A large literature documents the determinants of happiness. But is happiness all that people want from life; and if so, what type of happiness matters to them? Or are they willing to sacrifice happiness (however it is defined) for other attributes in their lives? We show direct evidence that individuals trade-off levels of happiness with levels of income, physical health, family, career success and education in a large sample of UK and US individuals. On average, all types of happiness are preferred to other attributes except health. People prefer affective happiness (feeling good) over evaluative (life satisfaction) and eudaimonic (worthwhileness) components. This result is robust to methodological innovations, such as the use of vignettes and judgements of the lives described.

1. Introduction

A large body of academic literature examines the sources of subjective well-being (SWB). This literature is often based upon survey questions of respondents' life satisfaction, and sometimes their positive or negative affect, or the sense of meaning or purpose in their lives. Respondents are also asked questions about other attributes, such as income, marital status, and employment status, so that the correlates and, ideally, causal determinants of the various components of SWB can be estimated (see Frey and Stutzer (2002), Di Tella and MacCulloch (2006), and Dolan et al. (2008) for overviews).

The research has advanced a great deal over recent years––not least because of the credibility SWB measures gained through a number of validation studies (see Diener et al. (2013) for an overview)––leading to an increasing interest amongst policymakers in using SWB measures to monitor progress and evaluate policy (Stiglitz et al., 2009; Fujiwara and Campbell, 2011; Helliwell et al., 2013). For example, the Office for National Statistics (ONS) in the UK has been measuring SWB in large general population samples since 2011. More recently, the OECD (2013) and a panel convened by the National Academy of Science in the US (National Research Council, 2013) released guidelines for the measurement of SWB.

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Surprisingly, however, very little research has been undertaken examining the strength of individuals' preference *for* SWB. When individuals consider tradeoffs between SWB and non-SWB aspects of their lives, how strongly do they care about SWB? Note that a regression-based estimate of the causal determinants of SWB is *not* equivalent to an estimate of the strength of preference for SWB (Adler, 2013). For example, an individual who is financially secure yet unhappy might experience little increased happiness as a result of additional income, but she nonetheless might still care more about getting richer than being happier. Whilst many psychologists would argue that this is a mistaken preference, economists and policymakers are greatly interested in people's preferences and, whatever our views about the role of preferences versus experiences, we need to know much more than we do at present about how much SWB matters to people alongside (and arguably even before) establishing what causes SWB.

In thinking about the relation between preferences and SWB, it is helpful to distinguish between *decision utility* and *experience utility* (Kahneman et al., 1997). If an individual's preferences are well-behaved, they can be represented by a utility function. An individual's *decision utility* for a given situation (also referred to as preference utility (Adler, 2013)) is the numerical value assigned to that situation by her utility function. By contrast, an individual's *experience utility* is a measure of the quality of her experiences.

A SWB survey provides information about experience utility. It also can be used as a strong proxy for decision (preference) utility *if* an individual's preferences are focused solely upon her experiences. That is, if an individual's overriding preference is to have a certain type of experience (such as feeling happy, experiencing a feeling of satisfaction, or experiencing a sense of purpose), then a SWB survey measuring that type of experience is a sufficient indicator of her decision utility.

But do individuals have an overriding preference for various experiences as opposed to the non-experiential components of their lives? This is an empirical question, and it is one that we directly address in this paper. Although SWB scholars sometimes assume without empirical investigation that individuals *must* prefer SWB over other aspects of their lives, there is nothing incoherent or irrational in having a preference for health, good relationships, liberty, accomplishment, knowledge, income, etc., in addition to a preference for various types of experiences (Nozick, 1974). Put differently, it is an empirical question whether SWB is a sufficient statistic for decision utility (Adler, 2013). Only a few studies have investigated the strength of individuals' preferences for experiences as opposed to other aspect of their lives. This paper builds from those studies, and makes some important innovations.

In an exploratory study, Adler and Dolan (2008) ask a small group of respondents in the UK and the US to rank possible lives described in terms of income, life expectancy, health, and SWB (with SWB described specifically as the percentage of time spent in a good mood). All four components have statistically significant coefficients in a rank-ordered logistic estimation, suggesting that aspects beyond SWB matter. Health has the largest coefficient, followed by SWB.[1]

Benjamin et al. (2012) present respondents with pairs of "options" (possible lives), distinguished by two *non*-SWB dimensions. One option is higher on one of the dimensions and lower on a second, while in the second option the levels are reversed. For example, in one pairing, the two non-SWB dimensions are sleep and income, described as:

Option 1: A job paying $80,000 per year. The hours for this job are reasonable, and you would be able to get about 7.5 h of sleep on the average work night.

Option 2: A job paying $140,000 per year. However, this job requires you to go to work at unusual hours, and you would only be able to sleep around 6 h on the average work night.

For each pairing,[2] respondents are asked both a *choice* question ("If you were limited to these two options, which do you think you would choose?") and a *predicted-SWB* question, defined in terms of life satisfaction, overall happiness, and felt happiness. The authors then examine whether respondents tend to identify the same option as both preferred and predicted to produce greater SWB. They find that SWB and choice coincide 83% of the time, although the degree of convergence varies from below 50% to above 95% depending upon the non-SWB dimensions involved, as well as the study populations and question wording.[3]

Benjamin et al. (2014a) compile an extensive list of 136 aspects as inputs into a single index of well-being, including measures of SWB, goals and achievements, freedoms, morality, self-expression, relationships, and the well-being of others in society. Respondents are asked to choose between two options differentiated by two to six of these well-being aspects, with one option described as "much higher", "somewhat higher" or "slightly higher" on each of the specified aspects. These responses are used to calculate marginal utilities for each of the 136 aspects. The authors find that measures of SWB and health have relatively large marginal utilities, as do family-related aspects, security, values of morality and meaning, freedom of choice and resources.

Fleurbaey and Schwandt (2015) ask a sample of US respondents to mainly think of feasible changes they could presently implement in their lives that could improve their SWB score reported in the beginning of the survey. Respondents are then additionally asked to think of feasible changes that could be implemented to again increase their SWB when presented with

[1] The authors acknowledge that this result must be interpreted with some caution, since coefficient size depends upon the range of the independent variable. For example, the possible lives presented were 65 or 75 years in length; a larger coefficient on life expectancy would be expected if the lives had been 50 or 75 years in length.

[2] Other pairings include: concert vs. birthday; absolute income vs. relative income; legacy vs. income; apple vs. orange; money vs. time; socialize vs. sleep; family vs. money; education vs. social life; interest vs. career; concert vs. duty; low rent vs. short commute; friends vs. income.

[3] The methodology of this study has been applied in a sample of low-income South Africans, with the degree of convergence being between 84 and 90% (Szabó and Ujhelyi, 2017).

a specific list of life domains, including health, financial situation, family, education, etc.; and whether it is relatively easy for them to actually implement these changes. Their main result suggests that about 90% of respondents do seek to maximise their SWB.

It is critical to note at this point that the studies mentioned above focus on respondents' anticipated change of happiness. In a recent study, Perez-Truglia (2015) directly addresses the validity of 'currently' stated happiness reports. Using food consumption and happiness data, the study infers preferences from happiness data via regression analysis, predicts how a utility-maximizing individual should act based on these estimates, and draws comparisons to actual behavior to find overall that, overall, actual happiness does predict choice.

Benjamin et al. (2014b) examine *actual* preferences of US medical graduate students' rankings of residency programs for purposes of a matching algorithm that assigns students to programs. This is an incentive-compatible choice with substantial future career implications. For purposes of the algorithm, graduates list their four most preferred programs; in addition, they are asked by the researchers to report their anticipated SWB at each of these both during the residency period and beyond, and to rate each program based on a variety of attributes (e.g., residency prestige/status, stress, career prospects). They find large differences in the coefficients of these attributes between choice-based and anticipated SWB regressions.

This study builds on this small literature and makes two significant and related contributions: one addresses methodological concerns and the other deals with issues of preference heterogeneity. Regarding the first contribution of this study, we introduce a novel question format to test the strength of preferences for SWB. Individuals are asked for a pairwise ranking of two possible lives: one life is described as higher in some aspect of SWB, but lower in some non-SWB dimension; and vice-versa for the second life. In short, the level of SWB is directly incorporated in the life described.

Specifically, a series of pairs of lives are randomly presented to each respondent. Each pair is such that one life is higher on one of three SWB dimensions and lower on one of five non-SWB dimensions, while the second life is lower on that same SWB dimension and higher on that non-SWB dimension. The three SWB dimensions are life satisfaction, happiness, and a sense of purpose. The five non-SWB dimensions are income, physical health, family, career success, and education. The two lives are described either as *brief scenarios* or as *vignettes*. The latter offer a more extensive description of the possible lives, thus making the difference between the relatively high and low combinations of the SWB and non-SWB dimensions more salient. We ask respondents a *choice* ("Which life would you choose to lead?") and/or a *judgment* question ("Which life is better?").

We believe that this format provides new information into the strength of individuals' preferences for SWB. One potential limitation of the Benjamin et al. (2012) format is that the question there posed may perhaps yield an overestimate of the degree to which individuals prefer SWB. Imagine that a survey respondent is told about two hypothetical lives, *A* and *B*, and says both (1) that she prefers life *A* over life *B* and (2) that she predicts SWB to be higher with life *A* than with life *B*. One explanation of this convergence between the choice and predicted-SWB question is that the respondent has an overriding preference for SWB, as opposed to health, relationships, income, knowledge, etc. A different explanation is that the respondent does care about the non-SWB features of her life, but her "hedonic forecasts" are such that she believes a higher level of the non-SWB features will increase her level of SWB. By incorporating SWB itself into the hypothetical lives, and presenting respondents with a clear pairwise choice between a higher level of SWB and a higher level of a non-SWB dimension, we aim to create a format that reveals the respondent's fundamental preferences for the SWB and non-SWB aspects of life, and that minimizes the confounding effect of hedonic forecasting.[4]

The second contribution of the current article is to delve deeply into preference hetereogeneity. Our methodology explores systematic differences between different types of SWB. Life satisfaction is the *evaluative* component of SWB; happiness is the *affective* component; a sense of purpose is the *eudaimonic* component. Recent recommendations regarding the measurement of SWB suggest that SWB surveys distinguish between the three components (Dolan and Metcalfe, 2012; National Research Council, 2013; OECD, 2013). They have also been shown to have different determinants (Keyes et al., 2002; White and Dolan, 2009). Our innovation is to separate the evaluative, affective, and eudaimonic components of SWB *in the context of measuring the strength of preference for SWB*. If we are to say how much SWB matters relative to other concerns, we need to be clearer about the type of 'happiness' we are referring to.

We gather data from a large sample of nearly 13,000 UK and US respondents, which also means that we are able to consider whether the preferences in a country where SWB data are being gathered for monitoring and policy appraisal purposes (the UK) differ from those in a country where SWB arguably has less policy resonance (the US).

Our main findings are as follows. For the brief scenarios, averaging across all possible combinations of SWB and non-SWB dimensions, roughly three-fifths of both UK and US respondents prefer the life higher in SWB. The probability of the respondent preferring the low SWB/high non-SWB life increases dramatically when the non-SWB dimension is health. Overall, individuals seem to have a stronger preference for the affective component of SWB (i.e., happiness) as compared to the evaluative and eudaimonic components. We find that respondents' own attributes have the expected relationship with

[4] An anonymous reviewer suggested the following analogy. Imagine that respondents are asked two questions about pairs of hypothetical lives: "Which would you choose?" and "Which do you predict will make you smile more?" Assume that respondents tend to pick the same life in answer to the two questions. It would be problematic to conclude from this finding that respondents' main goal in life is to smile. More plausibly, respondents are predicting that they will smile more if they get the lives they prefer.

Table 1
Survey design.

		Group						
		1	2	3	4	5	6	7
A	Four SWB Questions	X	X	X	X	X	X	X
B	5 Choice Scenarios and 5 Judgment Scenarios, for the same measure of SWB (Choice/Judgment order randomised)	X	X	X	X	X	X	
C	*Choice Vignettes:*							
	5 Life Satisfaction	X						
	5 Worthwhile		X					
	5 Happiness			X				
	Judgment Vignettes:							
	5 Life Satisfaction				X			
	5 Worthwhile					X		
	5 Happiness						X	
D	10 credibility vignettes (randomly allocated)							X
E	Demographics	X	X	X	X	X	X	X
Sample	**UK**	**1004**	**1004**	**1005**	**1004**	**1006**	**1005**	**409**
	US	**1021**	**1022**	**1022**	**1024**	**1025**	**1027**	**414**

Notes: Respondent's age, gender and ethnicity/race were asked at the very beginning to ensure a representative sample in terms of the latter.

their preferences: ceteris paribus, a higher attainment with respect to a non-SWB dimension is associated with an increased probability she will prefer the low-SWB life.

Section 2 offers an overview of the survey and describes the econometric approach of this study. Section 3 presents descriptive statistics and estimated results. Section 4 discusses and concludes.

2. Data and methods

2.1. The data

We collect data from a representative sample––in terms of race and ethnicity––of 6437 UK and 6555 US individual (Table A1 in Appendix A). Table 1 summarises the survey's design. To assess respondents' own SWB, we first ask the following four questions, using an 11-point scale (0–10), used by the ONS in the UK (Dolan and Metcalfe, 2012): *Overall, how satisfied are you with your life nowadays?* (measuring the evaluative component of SWB); *Overall, how happy did you feel yesterday?* and *Overall, how anxious did you feel yesterday?* (both measuring an affective component); and *Overall, to what extent do you feel that the things you do in your life are worthwhile?* (measuring the eudaimonic component).

Section B of the survey, presents a series of pairs of possible lives as brief scenarios. In each pairing, one scenario is higher in one of three SWB dimensions and lower in one of five non-SWB dimensions, and vice-versa for the second scenario. The three SWB dimensions are life-satisfaction (LS), happiness (H), and worthwhileness (W). The five non-SWB dimensions have been suggested by various scholars to be important components of a good life and include:

a)→*Income (Y)*: e.g., Luttmer (2005), Prause et al. (2009);

b)→*Physical health (P)*: e.g., Bergman et al. (2007), Salomon et al. (2009);

c)→*Family (F)*, where we especially focus on children, whose relationship with SWB remains a puzzle: e.g., Kushlev et al. (2012), Vanassche et al. (2013), Myrskylä and Margolis (2014);

d)→*Career/Goal attainment (G)*: e.g., Sheldon and Houser-Marko (2001), Scott et al. (2010);

e)→*Knowledge/Education (E)*: e.g., Hall and Matthews (2008), Heckman and Conti (2010), Winters (2011).

This results in fifteen combinations of scenarios in total (3[LS,H,W]x5[Y,P,F,G,E]), as illustrated in the following example.

> *Example: Life Satisfaction vs. Income Brief Scenario*
>
> *Life A: You feel satisfied with your life. You do not have enough money to get by.*
>
> *Life B: You do not feel satisfied with your life. You have enough money to get by.*

Each respondent is randomly assigned five of the fifteen possible pairings of brief scenarios. These five pairings all involve a single SWB dimension (out of the possible three). For example, an individual might be presented a pair of scenarios involving life satisfaction and income; followed by life satisfaction and health; life satisfaction and family; life satisfaction and career; and finally life satisfaction and education. The respondent's ranking of the two lives in each of the pairs presented to her was elicited both via a *choice* question (*Which life would you choose?*) and via a *judgment* question (*Which life is better?*). The choice/judgment ordering was randomised: either the respondent was asked first to rank the five pairs of scenarios via a

choice question and then via a judgment question, or vice versa.[5] Our rationale for using both choice and judgment questions is as follows: Although the main aim of this study is to elicit individuals' preferences between lives, we also wish to test the extent to which individuals' preferences correspond to their judgments of well-being.

Section C of the survey again presents respondents with a pairing of two possible lives, which are now, however, presented in the form of vignettes. These, contain further information designed to explain the divergence between the objective conditions of the life and its SWB level.

So as to make the presentation of the vignettes more plausible, the persons living the lives are described as third parties (e.g., "Michael" or "Sarah"), rather than the respondent ("you"). The three SWB dimensions combined with the five non-SWB dimensions produce fifteen pairings of vignettes. Respondents are presented either with a female or male subject, and the ranking of each pair is elicited either via a choice (*Imagine that you must choose to live one of these lives. Which one would you choose?*) or a judgment question (*Which life is better?*)—leading to sixty pairings of vignettes in total.[6] The following illustrates a pairing of two possible lives in the form of vignettes. So as to reduce cognitive load, each respondent is randomly assigned five of the sixty possible vignette pairings (all five keeping the SWB dimension and the gender described in the vignette constant––see Table 1, section C of the survey's design).

> *Example: Health vs. Mood Vignette*
>
> *Life One:*
> Michael is in good health. He has never had a major illness or injury. He rarely catches the cold or the flu, and almost never needs to take a sick day at work. Michael sees his doctor annually for a check-up, and always receives a clean "bill of health." He does not take any medications on an ongoing basis. Michael is strong, and good at physical activities.
>
> Despite his good health, Michael does not feel happy on a day-to-day basis. He often feels anxious. Michael is a grumpy person who often reacts negatively to the normal stresses of life. He tends to dwell on setbacks or annoyances. If asked to rate his happiness on a scale from 0 to 10, Michael would say that it is a "4".
>
> *Life Two*:
> Justin is in poor health. He has a chronic disease for which he takes daily medications. The disease is not life-threatening but makes it difficult for Justin to walk long distances or engage in sports or other vigorous physical activities. Justin experiences moderate pain several times a day. Justin sees his physician regularly about the disease.
>
> Despite his poor health, Justin feels happy on a day-to-day basis. He rarely feels anxious. Justin is a cheery person who is not bothered by the normal stresses of life, and does not feel upset even when he thinks about his health condition. He tends to ignore setbacks and annoyances. If asked to rate his happiness on a scale from 0 to 10, Justin would say that it is a "8".

It is worth noting at this point that choices and judgments between hypothetical lives might be considered to be less meaningful if these lives are not considered to be plausible. To account for this, section D of the survey asks respondents whether they find it credible that a life would juxtapose high/low SWB with low/high non-SWB. These respondents are randomly assigned ten possible vignette pairings and answer the following "credibility" question for each vignette in the pairing: "*How likely do you think it is that someone would have a life like [person described in Life One/Two]?*", with responses given on a 5-point scale ranging between '*very unlikely*' to '*very likely*'.

Rather importantly, note that in order to avoid biases to these credibility questions, this group of respondents was not asked to rank possible lives in either the brief scenario or vignette format.

2.2. Econometric model

Following Becker and Rayo (2008), we consider SWB as an aspect of an individual's overall utility function. In a decision-utility framework, individuals aim to maximise their utility. Hence, option x is weakly preferred to option y if and only if $U(x) \geq U(y)$, where options x and y consist of SWB ($SWB(.)$) and non-SWB ($O(.)$) bundles, so that $U(SWB(x),O(x)) \geq U(SWB(y),O(y))$. We use a probit model to study such preferences as expressed in hypothetical choices between lives high in a SWB attribute, $SWB(.)$, but low in a non-SWB attribute, $O(.)$, and vice-versa. Respondents' probability of preferring the high-SWB life in a given pairing of two lives is estimated as a function of the SWB and non-SWB dimensions in the pairing, given by:

$$Pr(SWB_H = 1|z)_i = F(b_0 + b_1 NONSWB + b_2 SWB + b_3 SWB_Q + b_4 ChoiceQ + b_5 CJ_{First} + b_6 DEMO_i + \varepsilon_i) \quad (1)$$

[5] It was thought that repeated alternation from choice to judgment would be distracting.

[6] See the Supplementary Online Appendix for a complete list of lives described in brief scenarios and vignettes.

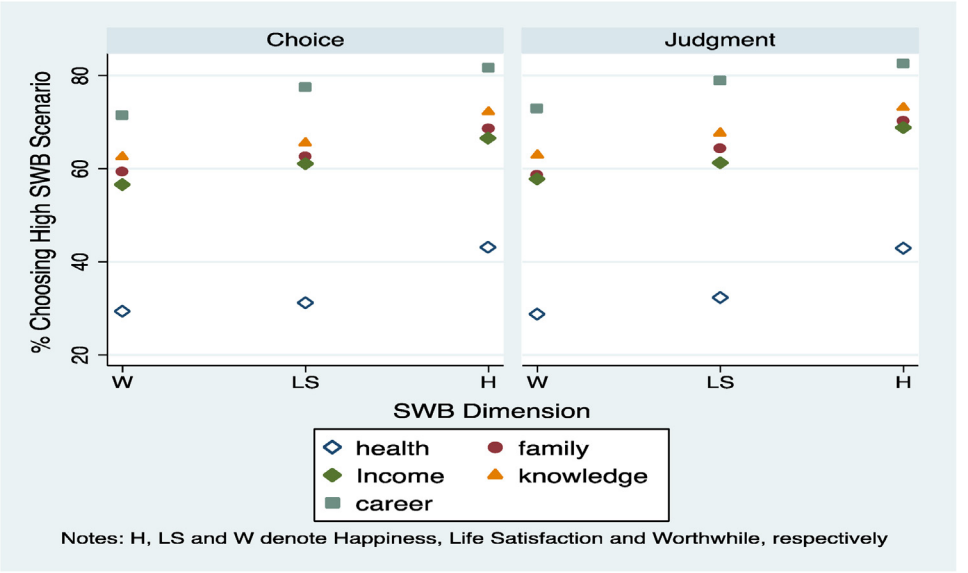

Fig. 1. UK Brief Scenarios.

Where *F(.)* is the standard normal cumulative distribution function. SWB_H is a binary variable equal to one if respondent *i* favours the life high in SWB and equal to zero otherwise. *NONSWB* is a set of indicators denoting the non-SWB dimension that varies between the two lives: income, physical health, family, career attainment, education. *SWB* is a set of indicators denoting the SWB dimension that varies between the two lives: life-satisfaction (LS), happiness (H), and worthwhileness (W).

We control for respondent's own SWB, denoted by SWB_Q—life satisfaction, worthwhile, happiness yesterday, and anxiety yesterday—which we group into four quartiles (Q) based on the distribution of responses in each country. *ChoiceQ* is a binary variable denoting whether the question is a choice (=1) or judgment one (=0). CJ_{First} is a binary variable indicating whether, in the ordering of questions, choice (=1) or judgment (=0) questions come first; this variable only applies for brief scenarios. *DEMO* is a set of socioeconomic characteristics available for the respondent, including gender, age, income level (in ten bands ranging from under £5000/$7500 to £100,000/$150,000 or more), marital status, employment status, highest education level reached, number of children under the age of 16 living in the household, racial and ethnic controls, and regional (UK) or state (US) controls.

The model is estimated separately for the US and UK samples and, within those samples, for the two modes of presentation of possible lives: brief scenarios and vignettes. Note that when estimating the responses to the vignettes, we add an additional parameter denoting the gender described in the scenario, which we additionally interact with the respondent's gender. In all models, robust standard errors are clustered at the respondent level, thus allowing for the error term, ε, to be correlated within, but not between, respondents.

3. Results

3.1. Descriptive statistics

The two respondent populations are fairly similar – see Table A2 in Appendix A. An analysis of SWB reports by nation suggests that the US sample reports, on average, higher levels of SWB, compared to the UK one, despite also being more anxious. The histograms presented in Appendix B suggest that this average difference is mainly due to the higher-end concentration of responses in the US.

In the UK, the overall percentage of respondents preferring the high-SWB brief scenario are 60% (61%) with the question framed in choice (judgment) mode; the US percentages are similar. In the UK, the overall percentage of respondents preferring the high-SWB vignette are 64% (66%) in choice (judgment) mode, while the corresponding percentages in the US are 66% (67%). See Appendix A, Table A5, for a statistical significance test of the brief scenario versus vignette framing.[7]

We next present the overall percentage of each country sample choosing the high-SWB life, as a function of the SWB and non-SWB dimensions in the two lives, as well as the choice/judgment framing; see Tables A3 and A4 in Appendix A for statistical comparisons. Figs. 1 and 2 offer a visual representation of these descriptive statistics for brief scenarios, while

[7] See Appendix A, Tables A3–A5, as well as the regression results in Section 3.2, for a statistical analysis of the choice versus judgment framing.

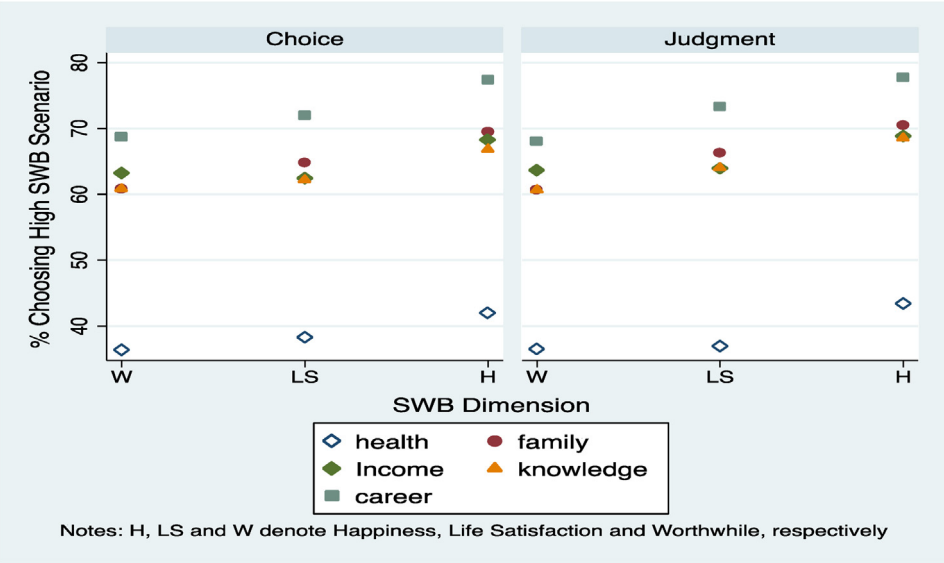

Fig. 2. US Brief Scenarios.

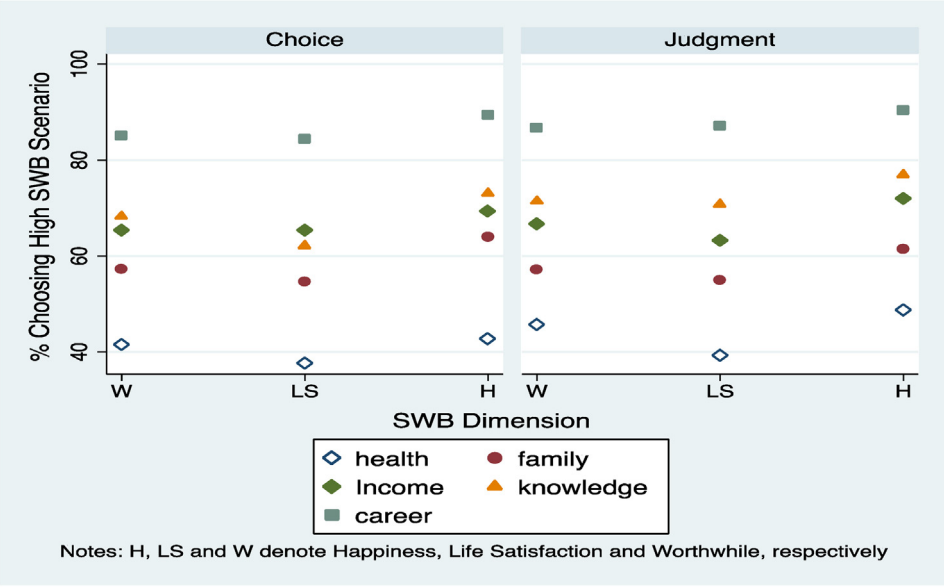

Fig. 3. UK Vignettes.

Figs. 3 and 4 do so for vignettes. In all of these figures, the y-axis represents the percentage of respondents choosing the scenario/life high in SWB. The x-axis depicts three 'columns' according to the measure of SWB considered in the specific scenario; i.e., worthwhileness (W), life satisfaction (LS), and happiness (H). These graphs, thus, allow us to better visualize changes in preferences for the scenario high in SWB both within *and* between SWB measures used in the scenarios. Each figure is further split in two panels for choice and judgment scenarios/vignettes.

Turning first to the brief scenarios, several clear patterns emerge. In the UK (Fig. 1), a majority of respondents prefer the high SWB life—except if the non-SWB dimension is health, in which case only a minority do so. Reading across the x-axis, this is true regardless of whether the SWB dimension is worthwhileness, life satisfaction, or happiness, or whether the preference is elicited via a choice or judgment question. Moreover, the non-SWB dimension makes a marked difference in choices between scenarios. For example, with the SWB dimension set at life satisfaction, and with health as the non-SWB dimension, the percentage choosing the high-SWB life is only 31% (choice) or 32% (judgment); holding life satisfaction fixed, the percentage increases to 61% to 66% (choice) or 61% to 67% (judgment) with income, family, or knowledge as the non-SWB dimension; and it jumps to 77% (choice) or 79% (judgment) with career as the non-SWB dimension. This specific sequencing

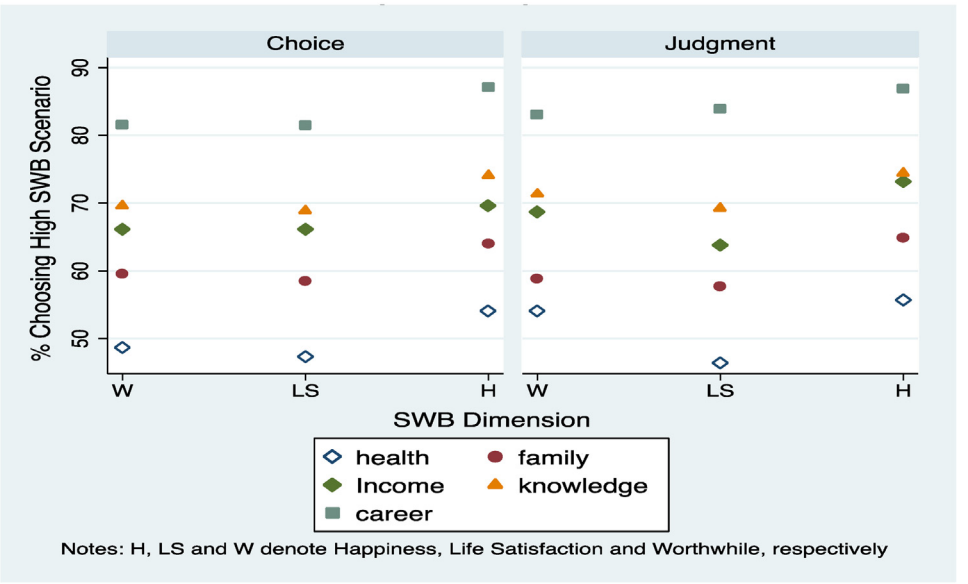

Fig. 4. US Vignettes.

with respect to the non-SWB dimensions––with health at the bottom of the figure, to income/family/knowledge in the middle, and career at the top––can also be observed for worthwhileness or happiness as the SWB dimension.[8]

The SWB dimension in the scenario also makes a (smaller) difference in affecting the probability of choosing the high-SWB life. Respondents are increasingly likely to choose the high-SWB life as the SWB dimension in the two lives shifts from worthwhileness, to life satisfaction, to happiness. All these patterns are, generally, also observed in the US sample (Fig. 2), although specific percentages of choosing the high-SWB life do differ between the two countries.

Turning now to the vignettes: for the UK (Fig. 3) we observe again that a majority of respondents choose the high-SWB life in both choice and judgment mode, except when health is the non-SWB dimension; that the choice of non-SWB dimension affects the likelihood of choosing the high-SWB life considerably; and that health is at the bottom of the figure, while career is at the top. There also appears to be more spread between income, education, and family. The effect of the SWB dimension seems, however, less clear than in the UK brief scenarios: it is no longer the case that a shift in the SWB dimension from worthwhileness, to life satisfaction, to happiness increases the percentage choosing the high-SWB life across all non-SWB dimensions for both choice and judgment framings. It is also worth noting that the strength of preference for health appears somewhat lower in the UK vignettes as compared to the UK brief scenarios. In scenarios (Fig. 1), the percentage choosing the high-SWB life with health as the non-SWB dimension ranges from 29% to 43%; in the UK vignettes (Fig. 3), by contrast, this percentage ranges from 37% to 49%.

Similar points hold true with respect to the comparison between the US vignettes (Fig. 4) and brief scenarios (Fig. 2). The effect of the SWB dimension is less clear in the vignette than brief scenario format, and the strength of preference for health is visibly weaker. In the US brief scenarios, the percentage choosing the high-SWB life with health as the non-SWB dimension ranges from 36% to 43%; by contrast, in the US vignettes, the percentages are 46% to 56%.

3.2. Regression results

3.2.1. Brief scenarios

Table 2 presents the marginal effects coefficients following the estimation of equation (1) for the UK (column 1) and the US (column 2).[9] The impact of the non-SWB and SWB dimensions of the possible lives is consistent with the descriptive statistics presented above. The reference case is a pair of possible lives with health as the non-SWB dimension and life satisfaction as the SWB dimension. Relative to this reference case, all remaining non-SWB dimensions are statistically significant in increasing the probability of the high-SWB life being selected, with career having the largest coefficient. Changing the SWB dimension from life satisfaction to worthwhileness reduces the probability of the high-SWB life being selected, while shifting to happiness increases it.

It is noteworthy that the effect sizes for the non-SWB dimensions (relative to the reference case) are an order of magnitude larger than for the SWB dimensions, or for any other variables in the table. In the UK (US), respondents are 25% (24%)

[8] However, this pattern does not hold true of the UK vignettes, or of the US rankings in either brief scenario or vignette mode.
[9] In what follows, we use 'significant' or 'significantly' to indicate statistical significance, not effect sizes.

Table 2
Regression results for brief scenarios and vignettes.

	BRIEF SCENARIOS		*VIGNETTES*	
	(1) UK	(2) US	(3) UK	(4) US
Scenarios:				
Income	0.246** (0.006).	0.237** (0.005)	0.208** (0.006)	0.15** (0.006)
Physical health	*Reference*	*Reference*	*Reference*	*Reference*
Family	0.263** (0.006)	0.24** (0.007)	0.137** (0.007)	0.085** (0.007)
Career	0.367** (0.005)	0.303** (0.005)	0.371** (0.005)	0.291** (0.005)
Knowledge	0.288** (0.006)	0.228** (0.006)	0.234** (0.006)	0.177** (0.006)
Life Satisfaction	*Reference*	*Reference*	*Reference*	*Reference*
Worthwhile	−0.044** (0.008)	−0.028** (0.009)	0.027** (0.009)	0.02* (0.009)
Happiness	0.071** (0.008)	0.051** (0.009)	0.075** (0.009)	0.061** (0.009)
Choice_Qs	−0.011** (0.003)	−0.007** (0.003)	−0.023** (0.007)	−0.013 (0.007)
Choice_Qs first	−0.035** (0.007)	−0.032** (0.007)		
Own SWB (Quartiles):				
LS_Q2	0.025* (0.011)	0.01 (0.011)	0.028* (0.012)	0.019 (0.012)
LS_Q3	0.037* (0.015)	−0.001 (0.014)	0.056** (0.015)	0.007 (0.015)
LS_Q4	0.03 (0.019)	−0.012 (0.016)	0.032 (0.019)	0.007 (0.017)
Worthwhile_Q2	0.005 (0.011)	0.015 (0.011)	−0.008 (0.012)	0.006 (0.012)
Worthwhile_Q3	0.009 (0.014)	0.062** (0.011)	−0.006 (0.015)	0.056** (0.012)
Worthwhile_Q4	0.021 (0.016)	0.092** (0.014)	0.004 (0.017)	0.049** (0.016)
Happiness_Q2	0.007 (0.01)	0.031** (0.011)	0.016 (0.011)	0.018 (0.011)
Happiness_Q3	0.014 (0.013)	0.036** (0.013)	0.016 (0.013)	0.025 (0.013)
Happiness_Q4	0.038 (0.016)	0.024 (0.014)	0.038* (0.017)	0.024 (0.015)
Anxiety_Q2	−0.021* (0.01)	−0.02* (0.01)	−0.036** (0.011)	−0.019 (0.01)
Anxiety_Q3	−0.009 (0.01)	−0.034** (0.011)	−0.047** (0.011)	−0.044** (0.012)
Anxiety_Q4	−0.022* (0.01)	−0.05** (0.011)	−0.058** (0.011)	−0.082** (0.012)
Demographics:				
Male	−0.033** (0.008)	−0.028** (0.007)		
Age	0.01** (0.002)	0.005* (0.002)	0.009** (0.002)	0.007** (0.002)
Age^2	−0.001** (0.0001)	−0.001* (0.0001)	−0.001** (0.0001)	−0.001* (0.0001)
Gender interactions:				
M_Res. x F_Vign.			−0.017 (0.011)	0.009 (0.01)
F_Res. x M_Vign.			0.043** (0.011)	0.057** (0.01)
F_Res. x F_Vign.			0.036** (0.011)	0.043** (0.01)
Married	−0.019 (0.011)	−0.005 (0.01)	−0.042** (0.011)	−0.01 (0.011)
Co-habiting	0.006 (0.011)	0.002 (0.013)	−0.004 (0.012)	0.006 (0.014)
Separated	−0.04 (0.024)	0.035 (0.029)	−0.012 (0.025)	−0.015 (0.03)
Divorced	−0.014 (0.016)	−0.019 (0.015)	0.017 (0.017)	0.008 (0.016)
Widowed	−0.037 (0.033)	0.04 (0.03)	−0.054 (0.038)	0.047 (0.03)
Employed PT	0.02 (0.011)	0.004 (0.012)	0.013 (0.012)	−0.007 (0.013)
Self-employed	0.016 (0.015)	0.038** (0.014)	0.018 (0.015)	0.028* (0.014)
Seeking work	0.015 (0.013)	−0.002 (0.012)	0.017 (0.014)	−0.004 (0.013)
Unemployed	0.016 (0.014)	0.058** (0.013)	0.036* (0.014)	0.025 (0.014)
Retired	0.013 (0.016)	0.01 (0.016)	0.021 (0.016)	0.007 (0.016)
Student	−0.011 (0.018)	−0.007 (0.017)	0.012 (0.019)	0.02 (0.017)
Degree	−0.038** (0.008)	−0.057** (0.008)	−0.024** (0.008)	−0.034** (0.009)
Graduate degree	−0.06** (0.013)	−0.06** (0.012)	−0.032* (0.013)	−0.083** (0.013)
Other education	0.005 (0.016)	−0.028 (0.015)	0.009 (0.016)	−0.01 (0.015)
Income 2	0.025 (0.018)	0.015 (0.02)	−0.009 (0.02)	0.04 (0.022)
Income 3	−0.008 (0.018)	−0.007 (0.02)	0.001 (0.019)	0.011 (0.021)
Income 4	0.008 (0.017)	−0.013 (0.019)	−0.003 (0.018)	0.027 (0.02)
Income 5	−0.016 (0.018)	−0.033 (0.019)	−0.002 (0.018)	0.022 (0.02)
Income 6	−0.04* (0.017)	−0.034 (0.018)	−0.009 (0.018)	0.029 (0.019)
Income 7	−0.051** (0.018)	−0.049* (0.02)	−0.018 (0.019)	0.002 (0.02)
Income 8	−0.056** (0.02)	−0.063** (0.02)	−0.022 (0.021)	−0.009 (0.021)
Income 9	−0.065** (0.02)	−0.085** (0.02)	−0.038 (0.021)	−0.016 (0.021)
Income 10	−0.101** (0.031)	−0.105** (0.025)	−0.082* (0.034)	−0.042 (0.025)
Children: 1	−0.051** (0.01)	−0.049** (0.01)	−0.018 (0.011)	−0.012 (0.011)
Children: 2	−0.078** (0.012)	−0.057** (0.012)	−0.027* (0.013)	−0.038** (0.012)
Children: 3+	−0.10** (0.018)	−0.109** (0.015)	−0.046* (0.019)	−0.067** (0.016)
Region/State effects	Yes	Yes	Yes	Yes
Ethnicity effects	Yes	Yes	Yes	Yes
N	60,280	61,410	30,140	30,705
Pseudo-R^2	0.085	0.067	0.098	0.073
Pr(SWB_H)	61.88%	61.87%	66.91%	68.38%

Notes: Regressions are probits. Dependent variable denotes the selection of the high SWB scenario/vignette. Coefficients are marginal effects (at means). Robust standard errors clustered at the individual level reported in parentheses. Own SWB base categories are the first quartile groups for each measure of SWB. Demographic base categories are: single, employed full-time, secondary/high-school education, income band 1, and no children. Respondent gender and gender in vignettes base category is 'male respondent x male vignette'. Pr(SWB_H) denotes the predicted probability of selecting the high SWB scenario/vignette.
*$p < 0.05$, ** $p < 0.01$.

likelier to choose life satisfaction over income, and 37% (30%) likelier to choose life satisfaction over career, as compared to the probability of choosing life satisfaction over health. This underscores that the strength of preference for health seems qualitatively stronger than for the other non-SWB dimensions.

The choice/judgment coefficient is statistically significant in both samples, although the effect size is very small. Individuals in both samples are 1% more likely to judge that the high-SWB life is better, than to state that they would choose it. There is also a small but statistically significant order effect: respondents presented first with the choice question are 3% less likely to choose the high-SWB life.

Recall that respondents are also asked about their own SWB. These coefficients, where statistically significant, have the expected direction––i.e., individuals with higher SWB are likelier to choose the higher SWB life—although sometimes a small magnitude. For example, UK respondents in the second quartile of life-satisfaction are 2.5% likelier to choose the higher SWB life, and respondents in the third quartile 3.7% likelier. US respondents in the third and fourth quartiles of worthwhileness are, respectively, 6.2% and 9.2% likelier to do so.

Respondents are also asked demographic questions mirroring some of the non-SWB dimensions: their income, educational attainment, and number of children. For example, in the UK, respondents in the middle-income decile are 4% less likely to choose the high-SWB life (as compared to the lowest-income group), and this probability thereafter decreases uniformly so that respondents in the highest income decile are 10% less likely to do so. A respondent with one (two, three) children is 5% (8%, 10%) less likely than a respondent with no children to select the high-SWB life. Having a degree reduces the probability of doing so by 4%, and a graduate degree by 6%. Compared to female respondents, male respondents are less likely to select the high-SWB scenario. Similar effects can be observed in the US sample.

3.3. Vignettes

Table 2, columns (3) and (4), presents the marginal effects coefficients following the estimation of Eq. (1) for the vignettes. As with the brief scenarios, the reference case is a pair of lives with physical health and life satisfaction as the non-SWB and SWB dimensions, respectively. All non-SWB dimensions continue to have a statistically significant and large impact in increasing the probability of choosing the high-SWB life. Career remains the least preferred non-SWB dimension. In both the UK and US, however, the ordering of the three intermediate dimensions (income, family, knowledge) differs between the vignette and brief scenario formats. Also, in both countries, although happiness remains the most preferred SWB dimension, the ordering between life satisfaction and worthwhileness has switched. In the brief scenarios, the probability of choosing the high-SWB life, relative to the life-satisfaction reference case, *decreases* if the SWB dimension is switched to worthwhileness; in the vignettes, this probability *increases*.

The effect of choice/judgment is the same as in the brief scenarios: respondents are significantly less likely to prefer the high-SWB life if asked a choice rather than a judgment question by 2.3% in the UK and 1.3% (albeit not statistically significant) in the US.

Because the vignette subjects are described in third person, with the vignette's gender being randomised, we are able to test the interaction between respondent's and subject's genders. In both countries, as compared to the reference case of a male respondent and male subject, female respondents are significantly more likely to prefer the high-SWB life, by 4% to 6%, regardless of the gender of the subject.

As for respondents' demographics there is some variation in which variables determine selections. For example, observe that, in both countries, several of the income deciles are statistically significant in the brief scenario format; by contrast, in the vignettes, none of them are statistically significant in the US sample, and only one—the highest—is significant in the UK, with a negative impact on preferences for the high-SWB life. In the UK, the married are less likely to select the high SWB scenario. The probability of selecting the high SWB scenario increases amongst the unemployed in the UK for the vignettes but not the brief scenarios, while the opposite pattern is observed in the US.

3.4. Brief scenarios/vignettes grouped by non-SWB aspects

Next, we group the pairings of lives by their non-SWB aspect. Our motivation for doing so is to test the effect respondents' non-SWB attributes have on the ranking of lives incorporating that specific attribute. We thus test, for example, how respondents' income affects the ranking of lives when the non-SWB dimension is income; how respondents' marital status and number of children affect the ranking of lives when the non-SWB dimension is family; how employment status does so with career as the non-SWB dimension; and how education level affects the ranking with education as the non-SWB dimension. Note that the absence of appropriate questions regarding respondents' own health prevents a similar test regarding health. Results are presented in Appendix C.

For brief scenarios in both countries we find that, for lives including income, relatively wealthier respondents are significantly less likely to choose the high SWB life. For lives including family, any indicator of family status other than single significantly reduces the probability of selecting the high SWB life. A similar effect is found for those with children who, compared to those without any, are less likely to select the high SWB life. Where career is the non-SWB dimension, the probability of choosing the high SWB life significantly increases for those seeking work and the permanently unemployed, as well as for those working part-time (UK only) and the self-employed (US only). Finally, with knowledge as the non-SWB dimension, we find that those with degree-level education and above are significantly less likely to choose the high SWB life.

Similar results are estimated for the case of vignettes, albeit with some differences; for example, only the very top income categories significantly reduce choice of the high-SWB life.

3.5. Credibility of vignettes

The research strategy in this article was to pose questions asking respondents for their preferences regarding lives with divergent SWB and non-SWB attainments. The SWB literature shows that some individuals certainly do experience such divergence (Dolan and Kahneman, 2008; Loewenstein and Ubel, 2008). Moreover, introspection or lay psychology might well persuade respondents to accept the possibility of a high SWB/low non-SWB and low non-SWB/high SWB life. Alternatively, respondents might find it implausible that a life would have divergent SWB and non-SWB attainments. If so, their answers to the choice/judgment questions posed would not be especially meaningful.

In order to address this issue, we pose a "credibility" question to a separate, random sample of respondents. Our supposition is that a respondent finding it implausible that a given life would contain divergent SWB and non-SWB attainments would rate the life as 'very unlikely' or 'unlikely'. In fact, only a small percentage of respondents in the credibility sample select these bottom-end categories––see Tables A6–A7 in Appendix A, providing descriptive statistics on the credibility of each vignette. The general result for all the vignette lives is that only a small percentage of respondents rate these as 'very unlikely' or 'unlikely'. The combined percentages of these two categories is virtually always below 20%, and in most cases below 15%.

3.6. Dominant preference for SWB

The regression model suggests that many individuals in the sample do not have a dominant preference for either the SWB or the non-SWB dimensions. For some SWB/non-SWB combinations (e.g., happiness and career), the model predicts that a majority of individuals will choose the high-SWB life. For other combinations (e.g., including health as the non-SWB dimension) a substantial fraction will prefer the low-SWB life. It remains, however, possible that a subset of respondents with unobserved attributes not incorporated in the regression model do, in fact, have a dominant preference one way or the other.

Recall that each respondent was asked to rank five pairs of lives, in various modes (brief scenario/choice, brief scenario/judgment, vignette/choice, vignette/judgment).[10] In each mode, the five pairs of lives have the same SWB dimension (be it life satisfaction, worthwhileness, or happiness), and include each of the five non-SWB dimensions (see Table 1). We can therefore calculate the percentage of respondents, by mode, who select the high-SWB life between zero times (i.e., never) to five times (i.e., always). Results are presented in Table A8 in Appendix A.[11]

In the brief scenarios, in both countries, the percentage of respondents always selecting the high-SWB life is well under 20%, except where the SWB dimension is happiness. In both countries, the percentages increase shifting from brief scenarios to vignettes. For the vignettes, too, the percentage of those always choosing the high SWB life is highest when the SWB dimension is happiness—reaching roughly 30% in the US (depending on choice/judgment framing) and 25% in the UK. Overall, Table A8 suggests that a large majority of respondents do not have a dominant preference for SWB.

4. Discussion

The evidence on what causes SWB is ever increasing, but there is scant information about how much SWB matters to people in the first place. Against this general background, this study uses a sample of more than 6000 respondents in the UK and the US, respectively, to make a number of important innovations. We use a novel question format to elicit preferences for SWB. The question asks for a pairwise ranking of two lives, one higher in SWB and lower in some non-SWB attribute, the other higher in the non-SWB attribute and lower in SWB. We consider three distinct dimensions of SWB––evaluative, affective or eudaimonic––and thereby illuminate which aspect of SWB is most strongly preferred as against non-SWB aspects of life.

Overall, our results suggest that respondents in both countries generally prefer higher levels of SWB, particularly affective happiness as opposed to life satisfaction and worthwhileness.[12] This lends support to the idea that affective SWB should be better accounted for in research and policy related to SWB, where evaluations of life overall still dominate the data and the discussions (Dolan, 2014). There is good empirical evidence for doing so. For example, Kahneman and Deaton (2010)

[10] The exception are respondents in the "credibility" group; see Table 1, Group 7.

[11] Marginal effects of probit models estimating the determinants of these combined selections are available upon request, but it is worth mentioning here that there was no clear pattern of such determinants.

[12] An anonymous reviewer asks how this finding is consistent with the finding of Benjamin et al. (2012) that predicted life satisfaction better correlates with the choice of hypothetical lives than predicted happiness. Note that the contrasting findings may result from differences in question wording and structure. Our question asked respondents to consider feelings of satisfaction as one component of a possible life. Benjamin et al. asked respondents to predict which life would "make you more satisfied with life, all things considered" – a question that might be read as asking for a forecast of feelings of satisfaction, but might also be read as asking which life would better satisfy the respondent's preferences. In any event, the contrasting findings are surely an important issue for future research.

find that an annual income above $75,000 increases evaluative, but not affective, SWB; and Knabe et al. (2010) find that, although the unemployed report lower levels of evaluative SWB, their affective SWB is not different to that of the employed because they are able to devote more time in enjoyable activities. Different conclusions between evaluative and affective measures for a number of family and work events––including marriage, divorce, retirement and unemployment––are offered in Luhmann et al. (2012). This is not to say that affective measures are superior to evaluative ones; rather, that researchers and policymakers ought to consider affective SWB as well in making assessments of how well life is going.

Our results offer some evidence suggesting that respondents' own SWB affects their preferences, although the degree to which it does is rather mixed and weak in this empirical exercise. Nonetheless, to offer but an example from our own findings, higher own anxiety has a negative effect on choosing the high SWB life. This could be attributed to the pervasiveness of cognitive dissonance––the idea that incongruities between our beliefs and our behavior cause us discomfort such that we seek to bring what we think and do in line with one another (Festinger, 1962)––or simply a selection effect, reflecting a respondent's initial preference. Future research should address the effect of own SWB on preferences for SWB more compellingly and additionally seek to test and possibly distinguish between cognitive dissonance and selection effects as drivers to those effects.

The results are also sensitive to the other background characteristics of the respondent. Being older significantly increases the probability of selecting the high SWB scenario/vignette, whilst being more highly educated and having children decreases it. The effect of income is interesting: although respondents with income broadly from £35,000/$52,000 and above are significantly less likely to select the high SWB scenario—decreasing with further increases in income bands—this is not the case for the vignettes, where income has no statistically significant effect except for the highest band in the UK.

On occasion, however, non-SWB aspects of wellbeing are strongly preferred. About three-fifths of responses to the brief scenarios suggest that SWB is preferred and this rises to about two-thirds for the vignettes. Interestingly, these figures are somewhat lower than those reported in Benjamin et al. (2012), who find that 83% of responses are consistent with happiness being the dominant element of wellbeing. Context matters, of course, and it could be that the other elements of wellbeing used in our study are described in ways that made them more desirable relative to how we described SWB. Of the non-SWB aspects of wellbeing preferred, health appears to be of special importance. More respondents would prefer to be healthy than to be 'happy', and this is consistent with the limited related research in this area (Adler and Dolan, 2008; Benjamin et al., 2014a). It could be that people believe that a good state of health is a prerequisite for 'happiness' and this would call into question the credibility (i.e., the "believeability") of our scenarios. As evidence against this suggestion, 'high SWB and low physical health' is seen as highly credible by both our UK and US samples.

We additionally considered whether our results are sensitive to the richness of the scenarios, by comparing simple brief scenarios with more embellished vignettes describing the life of a third person. The literature has noted significant differences when other forms of preference elicitation are used, such as vignettes in assessing SWB (see for example, Kapteyn et al., 2007; Angelini et al., 2014). This is also what we observe here where, overall, SWB is more strongly preferred in the vignettes.

This study, like any other, has some limitations. First, respondents make choices regarding hypothetical lives which are not actually experienced. Thus, respondents may not choose the option that will maximise their global level of well-being, perhaps due to false beliefs or predictions: trade-offs between scenarios are jointly evaluated, whereas the experience of the option is evaluated in isolation (Hsee and Zhang, 2004).

Second, the question format asks respondents to separate between the SWB and non-SWB aspects of lives, even though the two may often be found to be causally connected. This implies that the SWB/non-SWB trade-off that our questions are designed to elicit might not have been viewed by respondents as such—anticipating that income, physical health, family, goal/career attainment, and education/knowledge are drivers leading to greater SWB, and indeed vice versa. There is evidence, for example, of a causal link running from SWB to higher income (De Neve and Oswald, 2012); productivity (Oswald et al., 2015), which arguably has career implications; physical and mental health (Fredrickson and Levenson, 1998; Kubzansky and Kawachi, 2000; Lyubomirsky et al., 2005; Veenhoven, 2008); and marriage (Stutzer and Frey, 2006)—see Graham et al. (2004) for a range of life domains benefiting from increased SWB. In relation to this point, in making SWB/non-SWB trade-offs, respondents might also be considering other aspects of life––other than those described in the brief scenarios and vignettes––which we do not explicitly account for, deviating from the implicit assumption that the two lives described are otherwise similar.

Third, the brief scenarios represent extreme cases of SWB and other well-being elements—i.e., trading-off only relatively high/low levels, where the interpretation or values allocated to 'high' and 'low' arguably differ between respondents. Similarly, the vignettes trade-off fixed scores of SWB: eight for 'high' and four for 'low'.[13] There is a range of intermediate scores where trade-offs may be more interesting to study and are more closely related to peoples' everyday life experiences. Furthermore, our findings concerning the relative willingness of respondents to trade-off various non-SWB for various SWB aspects may reflect how the 'high' and 'low' points of both of these are described in our brief scenario and vignette questions. Future research should seek to explore these limitations further.

[13] The values of eight and four correspond to circa the 75th and 10th percentile, respectively, of the distribution of SWB responses from the Annual Population Survey in the UK.

Notwithstanding these issues, this study adds to the existing literature on the relative importance of SWB and other significant aspects of life and wellbeing. Overall, we can conclude that research into the determinants of 'happiness' is important because 'happiness' matters a lot to people—and also that the priority that policymakers give to health would seem to be consistent with the preferences of the general population. Whether policymakers ought to account for the preferences of the general population is another matter entirely—and, for what it's worth, an issue that the authors disagree on. One thing we can agree on is that there would seem to be little value in pursuing a career unless it made one happy. We are lucky to have been able to collaborate on this article, which has made the three of us very happy (but in different ways).

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jebo.2017.05.006.

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