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Flourishing Across Europe: Application of a New Conceptual Framework for Defining Well-Being

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Abstract Governments around the world are recognising the importance of measuring subjective well-being as an indicator of progress. But how should well-being be measured? A conceptual framework is offered which equates high well-being with positive mental health. Well-being is seen as lying at the opposite end of a spectrum to the common mental disorders (depression, anxiety). By examining internationally agreed criteria for depression and anxiety (DSM and ICD classifications), and defining the opposite of each symptom, we identify ten features of positive well-being. These combine feeling and functioning, i.e. hedonic and eudaimonic aspects of well-being: competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self esteem, and vitality. An operational definition of flourishing is developed, based on psychometric analysis of indicators of these ten features, using data from a representative sample of 43,000 Europeans. Application of this definition to respondents from the 23 countries which participated in the European Social Survey (Round 3) reveals a four-fold difference in flourishing rate, from 41% in Denmark to less than 10% in Slovakia, Russia and Portugal. There are also striking differences in country profiles across the 10 features. These profiles offer fresh insight into cultural differences in well-being, and indicate which features may provide the most promising targets for policies to improve well-being. Comparison with a life satisfaction measure shows that valuable information would be lost if well-being was measured by life satisfaction. Taken together, our findings reinforce the need to measure subjective well-being as a multi-dimensional construct in future surveys.

Keywords Well-being · Flourishing · Population sample · Europe · Measurement · Survey

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1 Introduction

Flourishing refers to the experience of life going well. It is a combination of feeling good and functioning effectively. Flourishing is synonymous with a high level of mental well-being, and it epitomises mental health (Huppert 2009a, b; Keyes 2002; Ryff and Singer 1998).

For too long the focus of mental health research and practice has been on the treatment of pathologies such as depression and anxiety, and to some extent on their prevention. It was tacitly assumed that well-being would prevail when pathology was absent. But a growing body of evidence shows that high levels of well-being are good for individuals and for society. In cross-sectional, longitudinal and experimental studies, high levels of well-being have been shown to be associated with a range of positive outcomes, including effective learning, productivity and creativity, good relationships, pro-social behaviour, and good health and life expectancy (see reviews by Chida and Steptoe 2008; Diener et al. 2010a; Dolan et al. 2008; Huppert 2009b; Lyubomirsky et al. 2005).

In order to understand the characteristics and causes of flourishing, we need to study flourishing in its own right, and not as the mere absence of mental disorder. To do so, we need to identify and characterise the people in the population who are flourishing, and the groups or nations in which there are high levels of flourishing. This will provide an essential foundation for those engaged in health promotion and policy making to increase the numbers of people who are flourishing.

The dedicated study of flourishing requires an accepted definition and good quality scales by which to measure it. Although various definitions and scales exist, deriving from a variety of theoretical and empirical perspectives (see below), there is no current agreement on which should be used in research, or to inform policy. In the same way that it has taken many years for clinicians to agree on the diagnosis of mental disorders (and this remains a dynamic process as our understanding of mental disorders increases), it will take some years to achieve agreement on the definition and measurement of mental health. In this paper, after briefly reviewing the current state of the art, we outline an approach which we hope offers a useful step towards this goal.

The earliest conceptual definition of mental health is usually attributed to Jahoda (1958). Based on clinical and personality theorists' conceptions of positive functioning, she identified six key elements of positive functioning: 'attitudes of an individual toward his own self', 'self actualization', 'integration', 'autonomy', 'perception of reality' and 'environmental mastery' (1958, p. 23). Influenced in part by Jahoda's work, as well as the theoretical perspectives of other scholars from clinical and developmental psychology, Ryff (1989) proposed six dimensions of psychological well-being: autonomy, environmental mastery, personal growth, positive relationships, purpose in life and self-acceptance. A different approach was taken by Antonovsky (1993) who equated psychological well-being with a sense of coherence, which he conceived as an enduring attitude whereby life is seen as comprehensible, manageable and meaningful. For Ryan and Deci (2001), using the theoretical framework of self-determination theory, the experience of well-being arises from the fulfilment of what they regard as three basic psychological needs: autonomy, competence and relatedness.

The approaches described thus far are exclusively concerned with eudaimonic aspects of well-being, i.e. with positive human functioning. Quality of life theories and measures also focus on functional ability (see review by Taillefer et al. 2003). But because they arise from the perspective of pathology and tend to focus on functional limitations, they are of

limited value in describing positive aspects of functioning, and will not be considered further in this paper.

Some other influential approaches regard well-being or positive mental health as requiring both hedonic and eudaimonic components; that is, the combination of feeling good and functioning well. Although Aristotle is usually credited with advocating the eudaimonic perspective, his notion of happiness or living life well includes both perspectives (e.g. Helliwell 2003). Following Aristotle, Seligman originally proposed that the three essential elements of well-being or 'authentic happiness' were pleasure, engagement and meaning (2002). In his latest work, he offers two further elements—relationships and accomplishment (Forgeard et al. 2011; Seligman 2011). According to Seligman, these five elements, with the acronym PERMA (positive emotion, engagement, relationships, meaning, accomplishment), are "the best approximation of what humans pursue *for their own sake*" (2011, p. 97), and together define well-being. Keyes' (2002) conceptualisation of well-being also combines feeling and functioning. Specifically, Keyes' measure combines hedonic/emotional well-being (happiness or life satisfaction) with Ryff's six eudaimonic dimensions of psychological well-being, along with five dimensions of social well-being.

There is also a school of thought which equates positive human experience with hedonic well-being alone, arguing that subjective well-being comprises an emotional component (the presence of positive emotions and the absence of negative emotions) and an evaluative component (life satisfaction). Proponents of this view have included Bradburn (1969), Watson et al. (1988), and Diener et al. (1999). Their views were largely arrived at through the comprehensive factor analysis of items which measure hedonic or affective aspects of well-being. More recently, Diener, who has been the most prolific researcher in the field of subjective well-being, has enriched his measurement of well-being by adding the construct of 'flourishing', whose components include: purpose in life, positive relationships, engagement, competence, self-esteem, optimism, and contribution towards the well-being of others (Diener et al. 2010b).

This illustrative, though far from complete, list of approaches to conceptualising well-being serves to indicate both the overlaps and the differences between existing definitions. The one thing they all have in common is the view that well-being is multi-dimensional. This contrasts sharply with the long-standing assumption, made in generations of economic and social surveys, that positive human experience can be adequately assessed using a single item about life satisfaction or happiness. Typical questions are: 'All things considered, how satisfied are you with your life as a whole, these days?' (World Values Survey; Gallup World Poll) or 'Taking all things together, how happy would you say you are?' (European Social Survey—Jowell and The Central Co-ordinating Team 2003). Certainly, if well-being can be adequately assessed with a single question rather than multiple questions covering different dimensions, that would be both desirable and cost-effective in large scale surveys.

A number of investigators have compared multi-dimensional measures against standard life satisfaction questions, and typically found only small or moderate correlations (e.g. Chirkov and Ryan 2001; Diener et al. 2009; Ryan et al. 1999; Ryff 1989; Ryff and Keyes 1995; Ryff et al. 1994). For example, Ryff and Keyes (1995) found correlations between life satisfaction and Ryff's six dimensions of psychological well-being, which ranged from .10 (purpose in life) to .42 (self-acceptance). Thus, while there is clearly a positive relationship between various well-being concepts and a measure of life satisfaction, it appears that the measurement of well-being may not be reducible to a simple, unidimensional notion such as life satisfaction without losing a great deal of potentially valuable

information. Measures of life satisfaction may be useful in their own right as an overall evaluation, but at this early stage in our understanding of flourishing, there is a case for retaining a multi-dimensional approach to the concept of well-being.

> In his 2007 review of multi-dimensional concepts of mental health, Keyes states that It is noteworthy that subjective well-being research unintentionally yielded clusters of mental health symptoms that mirror the clusters of symptoms used in the Diagnostic and Statistical Manual of Mental Disorders.…In the same way that depression requires symptoms of an-hedonia, mental health consists of symptoms of hedonia such as emotional vitality and positive feelings towards one's life. In the same way that major depression consists of symptoms of mal-functioning, mental health consists of symptoms of positive functioning (Keyes 2007, p. 98).

The idea that the characteristics of mental health may be the mirror opposite of the characteristics of a common mental disorder such as depression, suggests that it may be illuminating to see how far one can take this notion. Specifically, it would be instructive to *intentionally* examine what the characteristics of mental health would look like if we literally took the mirror opposite of the symptoms of the common mental disorders, namely depression and anxiety.

Taking this approach would serve an additional purpose. In their seminal 2004 paper "Beyond money: toward an economy of well-being", Diener & Seligman state, "…current measurement of well-being is haphazard, with different studies assessing different concepts in different ways, and therefore that a more systematic approach is needed." (Diener and Seligman 2004, p. 2). Accordingly, the first aim of this study was to undertake a systematic examination of the symptoms of depression and anxiety as specified by internationally agreed diagnostic criteria, and to identify the opposite of each symptom. The benefit of this approach is that the features of well-being can be deduced directly from the symptoms of disorder, in as objective a manner as possible.

Once the list of positive features has been deduced, the next step is to derive an operational definition of flourishing by considering how these features can be combined. When symptoms are combined into diagnostic criteria such as major depression, this does not require that every symptom of depression be present in every individual. Rather, a specified number of symptoms is required to be present. In the case of some disorders, certain symptoms are deemed to be necessary for the person to meet the diagnostic criteria. For example, 'excessive worry' is necessary for a diagnosis of generalised anxiety disorder. Thus, our second aim was to carry out a similar exercise in relation to flourishing.

Knowing how to combine features or symptoms in a meaningful and valid way is a step which cannot be taken through deduction, but requires a body of relevant data. For instance, before the advent of DSM-IV, diagnostic criteria were based more on the personal opinions of members of the DSM task force than on scientific evidence. DSM-IV improved on this situation through the use of systematic evidence to support their decisions (Widiger and Clark 2000). Likewise, in order to decide how to combine features for the definition of flourishing, we sought data from a large, representative population sample to establish how the features are distributed in the population, and how they cluster together. This step required finding existing measures of these features, undertaking psychometric analysis to establish the relationships between them, and identifying their underlying factor structure.

A subsidiary aim was to examine what was gained by this approach compared to using a simple measure of life satisfaction. This involved investigating the relationship between a standard life satisfaction measure, the individual features of flourishing, and the factorial structure.

Our third principal aim was to provide an illustrative example of the potential usefulness of our conceptual and measurement frameworks. To do so, we applied the operational definition of flourishing to a multi-national European data set which included relevant indicator items. The research questions we asked were: (1) how much do regions and nations differ in their overall prevalence of flourishing, using our operational definition?; and (2) what can we learn about the value of a multi-dimensional approach to flourishing by examining profiles of features in different regions and nations? Prior to addressing these questions we undertook further psychometric analysis to check if our measurement framework (e.g. factor structure, loadings, intercepts) was applicable across the European regions.

2 Methods and Measures

2.1 Identifying the Mirror Opposite of the Symptoms of the Common Mental Disorders

The first step was to list the symptoms and criteria used for the most common mental disorders, depression and anxiety, in two widely used international classifications of diseases. These are the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association (1994), and the International Classification of Diseases (ICD-10) of the World Health Organisation (1993). The specific diagnostic categories we examined were Major Depressive Episode (DSM-IV) and Depressive Episode (ICD-10), and Generalised Anxiety Disorder (terminology common to both systems). There are two reasons for focusing on these categories. First, depression, generalised anxiety disorder, and mixed depression and anxiety are by far the most common of the mental disorders, having the highest prevalence in the population (e.g. McManus et al. 2009). The second reason is that the other categories of anxiety disorder (phobias, OCD, PTSD) do not have a polar opposite. For example, one either has a phobia (of different levels of severity) or not, but it is difficult to see what the positive pole of a distribution of phobia could be. The same applies to OCD and PTSD. In contrast, for depression and generalised anxiety, one can go beyond the neutral point where the symptoms are absent, to a positive pole, which represents such features as happiness and hopefulness (depression) or calmness and resilience (generalised anxiety). And because depression and anxiety so commonly co-exist, we have chosen to combine the symptoms of these two disorders to represent one end of the mental health spectrum. In addition, we included DSM-IV Axis V—Global Assessment of Functioning, which rates the individual's general level of personal and social functioning, and which the ICD-10 classification includes within their diagnostic criteria.

In order to identify the mirror opposite of the symptoms of generalised anxiety and depression, a panel of four individuals (three psychologists and one lay person) began by expressing in simple English the words or phrases which best seemed to capture the positive pole of each symptom. Somatic symptoms, such as significant weight loss, sleep problems or psychomotor agitation, were not included, mainly because our focus was on mental states rather than physical states. Also, it is not clear what the positive pole of these physical symptoms would be. We then assigned a single word or pair of words which in our judgement best summarised each positive concept. The results are presented in Sect. Appendix.

Some opposites were easier to identify with confidence than others, but what emerged is that the following ten features appeared to account for the opposite of the range of symptoms of generalised anxiety and depression listed in these two diagnostic systems. They are, in alphabetical order: competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality.

2.2 Deriving an Operational Definition of Flourishing

The DSM and ICD classification systems go beyond listing symptoms, to combining them in an evidence-based manner to create a diagnosis. This requires a categorical approach, both to deciding whether a particular symptom is present or absent, and then to deciding on the number of symptoms which must be present in order to reach a diagnosis. We undertook a parallel exercise in relation to categorising mental health and its component features. To do so, we needed to find evidence of how these features are distributed in the general population, and the way in which they tend to cluster together. Finding a suitable data set was not straightforward, since it is rare for studies of large, representative population samples to include measures of the full range of features we identified in the previous stage of this investigation.

2.2.1 Utilising Existing Measures as Indicators of the Features of Flourishing

The European Social Survey (ESS; Jowell and The Central Co-ordinating Team 2003) was selected, since it contains items corresponding to each of the ten features, and was administered to representative population samples in 23 countries—a total of 43,000 people aged 15 and above. The ESS uses random sampling methods and is conducted every 2 years. In Round 3 which took place in 2006/2007, it contained a supplementary well-being module (Huppert et al. 2009), on which the current analysis is based. This module on personal and social well-being was very wide-ranging. Almost half of the 54 items were concerned with aspects of social or community well-being, specific job-related well-being, income comparison, perceived opportunities, or aspects of lifestyle (e.g. physical activity). Only 19 items were related to the ten features of flourishing identified above. The remaining personal well-being items were concerned with life satisfaction, negative emotions (including the short Center for Epidemiologic Studies Depression Scale—CES-D; Radloff 1977; Steffick 2000) and aspects of personal functioning not relevant here (e.g. altruism, autonomy). Five features of flourishing were represented by only a single item (competence, emotional stability, meaning, optimism, resilience), so for the remaining five we decided to choose the item which seemed to best capture the construct. From a psychometric perspective it would have been preferable to have several good items per construct, but such data were not available. Where a choice of items was available, our selection criteria, in addition to face validity, were: (a) using a general rather than a specific (past-week) time frame where possible, since most personal well-being items in the ESS use a general time frame; (b) using positively worded rather than negatively worded items where possible, and (c) using broader rather than very specific items where possible. For engagement, we chose 'I love learning new things' rather than the past-week items 'I felt absorbed' and 'I felt bored'. For positive relationships we chose 'There are people who really care about me' rather than the more specific 'The time I spend with my family is enjoyable/stressful'. For self-esteem, we chose 'In general I feel very positive about myself' rather than the negative 'At times I feel as if I am a failure'. In the case of vitality, since there were no questions about general vitality, we chose the past-week question

Table 1 Features of flourishing and indicator items from the European Social Survey

Positive feature	ESS item used as indicator
Competence	Most days I feel a sense of accomplishment from what I do
Emotional stability	(In the past week) I felt calm and peaceful
Engagement	I love learning new things
Meaning	I generally feel that what I do in my life is valuable and worthwhile
Optimism	I am always optimistic about my future
Positive emotion	Taking all things together, how happy would you say you are?
Positive relationships	There are people in my life who really care about me
Resilience	When things go wrong in my life it generally takes me a long time to get back to normal. (reverse score)
Self-esteem	In general, I feel very positive about myself
Vitality	(In the past week) I had a lot of energy

'I had a lot of energy', in favour of other post-week items—'I felt tired', 'I could not get going' or 'I felt rested'. Note that for the positive emotion item we used a standard question about happiness which is part of the core ESS: 'Taking all things together, how happy would you say you are?' rather than the past-week items from the well-being module ('I was happy' and 'I enjoyed life').

Table 1 lists the ESS items which we judged as corresponding most closely to each of the ten features of flourishing. Most items were rated on a 5-point scale from 'strongly agree' to 'strongly disagree'. The exceptions were positive emotion which was rated on a scale from 0 to 10 ('extremely unhappy' to 'extremely happy'), and emotional stability and vitality which were rated on a 4-point scale from 'none or almost none of the time' to 'all or almost all of the time'. Categorising a feature as present or absent required choosing an appropriate cut point, and this was largely determined by the type of response scale used. In the case of the seven items using the agree/disagree format, respondents were required to indicate that they agreed. However, on two of the items, the responses were so skewed that the vast majority of participants said they agreed (engagement 80.5%; positive relationships 90.2%), so in these two cases, we used the 'strongly agree' category. The positive emotion item also showed a very strong positive skew (median was between 7 and 8 on the 0–10 scale) so we chose 8–10 as our positive category. For the items about emotional stability and vitality, participants were categorised as demonstrating these characteristics if they responded 'all or almost all of the time' or 'most of the time'. We also calculated mean scores and found that for each item, the chosen cut points corresponded to the category above the mean.

2.2.2 Combining Existing Measures into an Operational Definition of Flourishing

The next step was deciding how to combine these features in order to establish an overall category corresponding to mental health or flourishing. Data were weighted using standard ESS techniques to ensure that: (a) the sample in each country was representative of its population; and (b) each country was represented in proportion to its population size. The countries taking part in the ESS were divided into three geographical regions. Countries within each region share broad similarities in terms of their culture and governance. The three regions were: Northern Europe (Denmark, Finland, Norway, Sweden), Southern/

Western Europe (Austria, Belgium, Cyprus, France, Germany, Ireland, Netherlands, Portugal, Spain, Switzerland, United Kingdom), and Eastern Europe (Bulgaria, Estonia, Russian Federation, Poland, Slovakia, Slovenia, Ukraine). Hungary was excluded from the analysis since data for the vitality item was missing among all respondents in Hungary.[1] Scores on each item were standardised within each region to reduce or eliminate unwanted cross-regional differences such as response set (Matsumoto and Ven der Vijver 2011; Van de Vijver and Leung 1997).

We began by calculating the inter-item Spearman correlations, which are presented in Table 2. It can be seen that all items are positively correlated, and range from .10 (engagement and emotional stability) to .49 (self-esteem and optimism). All correlations are statistically significant ($p < .001$, two tailed), reflecting the very large sample size. To establish how many dimensions of well-being were incorporated in these data we undertook an Exploratory Factor Analysis (EFA) with oblique rotation. The EFA revealed a clear two-factor structure explaining 43% of the variance, with each item loading at least 0.5 on the corresponding factor (Table 3). The first factor comprises emotional stability, vitality, optimism, resilience, positive emotion, and self-esteem, and is identified as 'positive characteristics'. The second factor comprises engagement, competence, meaning, and positive relationships, and is identified as 'positive functioning'.

To address the question of how much this multi-dimensional approach might tell us about flourishing compared to a single item about life satisfaction, we repeated the two previous steps, but this time included the standard life satisfaction item from the core ESS—'How satisfied are you with your life as a whole nowadays?' (rated on a 0–10 scale). All correlations were positive, but nine of the ten flourishing items had a low correlation with the satisfaction item, ranging from .11 (engagement) to .29 (optimism). The striking exception was positive emotion, which correlated .68 with life satisfaction. This was considerably higher than any of the correlations between the ten features of flourishing. Again, all the correlations were significant because of the large sample size ($p < .01$, two tailed).

When we added the life satisfaction item to the EFA, this created a distinct third factor, which we termed 'positive appraisal'. The model explained 52.0% of total variance. The only one of the ten flourishing features which had a significant loading on this factor was positive emotion (Table 4). This analysis indicates that with respect to the present measures, life satisfaction and happiness are measuring a very similar construct, which we can equate with hedonic well-being, whereas all other items are measuring eudaimonic aspects of well-being.

Building on these findings, we set about to propose an operational definition of flourishing. In order to establish how many of the features of positive characteristics and positive functioning should be present, we were guided by the approach used for mental disorders. Diagnostic criteria for depression and anxiety do not require that all symptoms be present. They do, however, require the presence of one or two key symptoms, such as 'excessive worry' for the diagnosis of generalised anxiety disorder. DSM-IV also requires that the majority of all symptoms be present. Following this approach, we proposed that positive emotion be a required feature, given that it is the only feature which addresses the hedonic (emotional) aspect of well-being. We also proposed that the majority of the symptoms in each of the 'positive characteristics' and 'positive functioning' factors be

[1] Some countries which have taken part in other round of the ESS did not take part in Round 3 because they were unable to secure funding in time of the start of field work. These were Croatia, Czech Republic, Greece, Iceland, Israel, Italy, Latvia, Lithuania, Luxembourg, Romania and Turkey.

Table 2 Spearman correlations among different well-being indicators

	Competence	Emotional stability	Engagement	Meaning	Optimism	Positive emotion	Positive relationship	Resilience	Self-esteem	Vitality
Competence	–									
Emotional stability	.19	–								
Engagement	.37	.10	–							
Meaning	.31	.14	.26	–						
Optimism	.28	.24	.24	.25	–					
Positive emotion	.18	.27	.17	.22	.31	–				
Positive relationship	.20	.12	.22	.26	.17	.23	–			
Resilience	.13	.21	.13	.14	.22	.24	.14	–		
Self-esteem	.28	.23	.19	.24	.49	.25	.22	.21	–	
Vitality	.27	.37	.19	.20	.29	.27	.11	.24	.25	–

All correlations are significant at the .01 level

Table 3 Exploratory factor analysis of ESS indicator items

	Factor	
	1 (31.8%)[a]	2 (11.1%)[a]
Emotional stability	**.77**	−.19
Vitality	**.68**	.01
Resilience	**.57**	−.06
Optimism	**.56**	.24
Happiness	**.56**	.15
Self-esteem	**.50**	.28
Engagement	−.09	**.68**
Meaning	.13	**.64**
Positive relationships	−.06	**.59**
Competence	.20	**.59**

[a] % of variance explained

Table 4 Exploratory factor analysis of ESS indicator items plus life satisfaction

	Factor		
	1 (31.8%)[a]	2 (10.9%)[a]	3 (9.3%)[a]
Emotional stability	**.71**	−.09	.09
Vitality	**.69**	.12	−.02
Resilience	**.51**	.02	.08
Optimism	**.44**	.28	.20
Self-esteem	**.40**	.36	.11
Engagement	.06	**.70**	−.22
Meaning	.03	**.64**	.14
Competence	.23	**.63**	−.04
Positive relationships	−.33	**.54**	.36
Life satisfaction	.15	−.09	**.86**
Positive emotion	.16	−.01	**.83**

[a] % of variance explained

present. The criterion we selected was having all but one of the features of positive characteristics and all but one of the features of positive functioning, together with positive emotion. This was met by 15.8% of the total European sample, and adopted as our operational definition of flourishing.

2.2.3 Flourishing versus Life Satisfaction

To establish how our composite measure of flourishing is related to a standard single-item measure of life satisfaction, we examined the correlation between the two measures in the full European sample. The Spearman correlation between flourishing and life satisfaction was .34 ($p < .01$). To compare the percentage of individuals who were flourishing with the

percentage who had high life satisfaction, we needed to select an appropriate cut point on the latter measure. Responses on this measure were very skewed. Using a score of 8–10 as indicative of high life satisfaction, we found that 40% of Europeans had high life satisfaction. Using a score of 9–10 the corresponding figure was 18.1%. We chose the higher of these cut points to categorise high life satisfaction, since the percentage is similar to the percentage who meet the criterion for flourishing (15.8%). For Europe as a whole, the percentage who were both flourishing and had high life satisfaction was 7.3%. Among people who met the criterion for flourishing, 46.0% had high life satisfaction, and among people who had high life satisfaction, 38.7% were flourishing.

2.3 Calculating the Prevalence of Flourishing Across Europe

Having derived our operational definition of flourishing, we planned to compare the prevalence of flourishing across the 22 European countries in the ESS which had full data on the ten features. Before doing so, however, we needed to check the cross-cultural comparability of the item and factor structure to ensure that comparison across Europe is valid and meaningful. Since previous studies have shown regional consistency across Europe, we began with a multi-sample Confirmatory Factor Analysis (CFA) of the three regions—Northern Europe, Southern/Western Europe, and Eastern Europe.

We used Structural Equation Modeling (SEM) to test for scale invariance, or measurement equivalence (Cheung and Rensvold 1999). This involved testing four nested models across the three regions. The first step investigates whether the two-factor model fits the data well in more than one sample (construct or form invariance—Model 1). Next, all factor loadings are constrained to be invariant across the groups in the model (measurement invariance—Model 2). The next step tests the equivalence of item intercepts across groups (Model 3). The final step is to investigate full score (or scalar) invariance, which involves constraining the factor variances and covariance matrix to equivalence across groups (Model 4).

Since the Chi-square goodness of fit test is very sensitive to sample size (Marsh et al. 1998), model fit was determined using standard fit indices, namely Comparative Fit Index (CFIs), Lisrel GFI Fit Index (GFI), and Root Mean Square Error of Approximations (RMSEAs). In general, CFI and GFI values of .90 or above, and RMSEA values of .06 or below are indicative of good empirical fit (Browne and Cudeck 1993; Byrne 1994). When

Table 5 Differences in model fit for Northern Europe ($n = 7{,}078$), Southern/Western Europe ($n = 22{,}085$) and Eastern Europe ($n = 13{,}837$) for the 2-factor model

Model tested	χ^2	*df*	CFI	GFI	RMSEA (90% CI)	$\Delta\chi^2(\Delta df)$
Model 1	2,444.55	90	.96	.98	.027 (.026–.028)	–
Model 2	2,845.22	106	.96	.99	.026 (.025–.027)	400.67 (16)*
Model 3	7,205.18	126	.96	.98	.038 (.037–.039)	4359.96 (20)*
Model 4	7,415.25	132	.95	.98	.038 (.037–.038)	210.07 (6)*

Model 1 Baseline model

Model 2 All factor loadings being constrained

Model 3 All item intercepts being constrained

Model 4 All factor variances and covariances being constrained

* $p < 0.001$

moving to a more stringent model, a drop in CFI >.02 would be regarded as a reduction in fit, and the more restricted model is not confirmed (Cheung and Rensvold 1999).

The results are reported in Table 5. Model fit parameters demonstrated an acceptable result for the two-factor model, indicating measurement equivalence across the three regions. As shown in Table 5, the configural invariance model achieves acceptable fit for the data across the three regions (χ^2 $(df = 90) = 2{,}444.55$, $p < .001$, CFI = .96, GFI = .98, RMSEA = .027 (90% CI: .026–0.28). The χ^2 of subsequent constrained models also achieved acceptable fits. The minimal change in fit indices suggested that the two-factor model achieved measurement equivalence across Northern, Southern/Western, and Eastern Europe. The analysis was repeated for the three-factor model, and again, goodness of fit data showed measurement equivalence across the three regions.

3 Results

Having established regional equivalence, we applied the operational definition of flourishing described above to the nations which took part in the European Social Survey (Round 3). The estimated prevalence of flourishing (% meeting criterion) is shown in Fig. 1. It can be seen that there is very large variation across Europe, with high consistency across regions. All the Nordic countries are in the top third of the distribution, while all the Eastern European countries are in the bottom half. With respect to individual countries, there was more than a four-fold difference between the highest and lowest countries. Denmark has by far the highest rate of flourishing (40.6%), followed some way behind by Switzerland (30.2%) and Austria (27.6%). At the other end of the scale, three countries have rates of less than 10%: Slovakia (9.9%), Russian Federation (9.4%), and Portugal (9.3%).

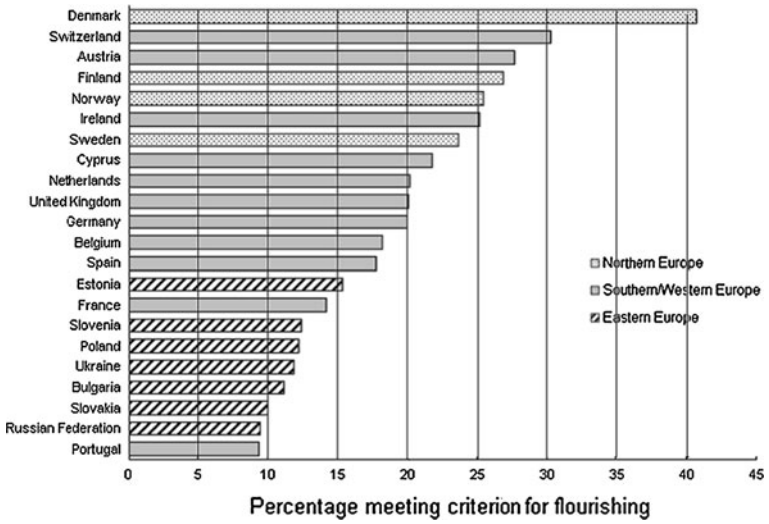

Fig. 1 Prevalence of flourishing across European countries participating in the European Social Survey 2006/7

We also examined the way regions and countries differ in terms of their profiles across the ten features, by examining rankings of the percentage showing each feature. It can be seen (top of Table 6) that a consistent pattern was observed among regions, with Northern Europe having the highest rankings, followed by Southern/Western and Eastern Europe. The only exception was for vitality, where Eastern Europe had the highest ranking and Northern Europe the lowest.

Profiles for individual countries are also shown in Table 6. Some countries such as Denmark had consistently high rankings, while others such as Slovakia and Portugal had consistently low rankings. Denmark had the highest ranking among the 22 countries on five of the ten features—emotional stability, meaning, positive emotion, positive relationships, and resilience. Other countries which obtained top rankings were: Switzerland (competence), France (engagement), Cyprus (optimism), Spain (self-esteem), and Slovenia (vitality). The countries with the lowest rankings were Bulgaria (emotional stability, positive emotion, resilience), Russia (meaning, optimism), Spain (competence, vitality), Poland (engagement), France (self-esteem), and Slovakia (positive relationships).

Variations in rankings could be observed in all countries. Some countries, notably France, and Spain, showed extreme variation, having the highest rankings on some features and the lowest on others. Interestingly, although Portugal had the lowest overall level of flourishing among the 22 countries, it did not score at the bottom on any of the individual features. Figure 2 depicts the profiles of four countries, selected to represent the range of diversity in country profiles.

4 Discussion

In this paper, we have derived a conceptual definition of flourishing which builds on the recognition that flourishing is more than the absence of disorder, and needs to be elucidated and investigated in its own right. We explored the idea that flourishing could be conceived as the opposite of mental disorder, rather than its mere absence. Through a systematic examination of the symptoms of the common mental disorders, generalised anxiety and depression, as described in two internationally agreed sets of diagnostic criteria (DSM-IV and ICD-10), we identified the positive pole of each symptom dimension. This resulted in ten features representing positive aspects of mental functioning: competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationship, resilience, self-esteem, and vitality. While our choice of terms contains some element of subjective judgements, this was essentially a deductive exercise; we had no preconceptions about the nature and number of constructs which we would find.

One finding that emerged from this approach is that it includes both hedonic and eudaimonic components; that is, both positive feeling and positive functioning. Some conceptual approaches to well-being have focused exclusively on the hedonic aspects (e.g. Bradburn 1969; Diener et al. 1999; Watson et al. 1988), while others have focused exclusively on eudaimonic aspects (e.g. Antonovsky 1993; Jahoda 1958; Ryan and Deci 2001; Ryff 1989). Our conceptual framework is more in keeping with the approaches of Keyes (2002), Seligman (2002, 2011), Tennant et al. (2007), and the recent work of Diener et al. (2010a, b), all of which incorporate both hedonic and eudaimonic aspects of well-being.

It is also interesting to examine the extent of overlap between the flourishing constructs derived from our deductive approach and the variety of definitions used in the literature. All five constructs proposed by Seligman as the elements of well-being, namely PERMA

Table 6 Ranking of each feature of flourishing across 3 regions and 22 countries

	Competence	Emotional stability	Engagement	Meaning	Optimism	Positive emotion	Positive relationships	Resilience	Self-esteem	Vitality
Northern Europe	1	1	1	1	1	1	1	1	1	3
Southern/Western Europe	2	2	2	2	2	2	2	2	2	2
Eastern Europe	3	3	3	3	3	3	3	3	3	1
Denmark	3	1	10	1	5	1	1	1	11	6
Switzerland	1	5	11	2	2	2	12	5	3	2
Austria	4	14	3	5	4	11	4	14	12	4
Finland	12	10	4	15	10	3	8	4	10	17
Norway	6	2	7	4	8	4	11	2	20	12
Ireland	8	13	13	3	3	7	6	7	6	14
Sweden	2	4	16	12	9	5	10	3	8	19
Cyprus	13	18	8	6	1	7	7	16	4	16
Netherlands	14	6	20	10	14	8	14	8	17	2
United Kingdom	15	19	15	14	12	10	3	6	13	20
Germany	5	3	18	18	7	15	17	12	2	5
Belgium	10	12	5	7	17	9	13	9	21	15
Spain	22	15	8	17	13	12	5	11	1	22
Estonia	20	8	17	19	11	17	15	17	14	8
France	10	17	1	9	21	14	20	10	22	9
Slovenia	18	7	21	8	6	13	21	19	5	1
Poland	19	21	22	13	19	16	19	13	7	11
Ukraine	9	9	6	21	6	21	9	21	16	7
Bulgaria	16	22	2	20	16	22	2	22	15	18
Slovakia	21	11	19	16	20	18	22	18	19	13
Russian Federation	7	16	14	22	22	19	18	20	18	10
Portugal	17	20	12	11	15	19	16	15	9	21

Regions and countries are presented in order of their overall % of flourishing

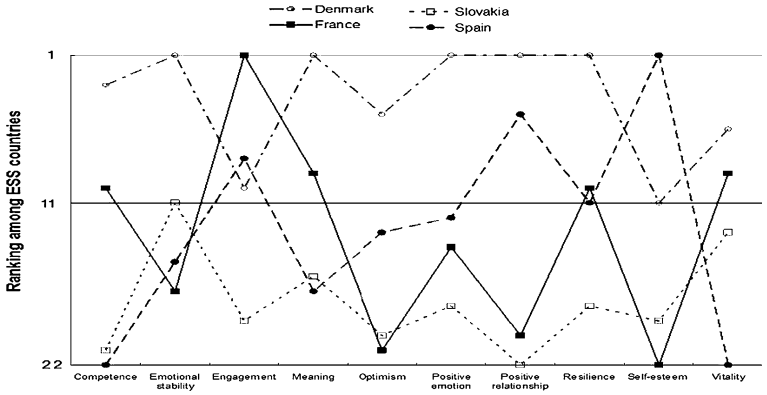

Fig. 2 Profiles of flourishing: rankings on features of flourishing for selected European countries

(positive emotion, engagement, relations, meaning, accomplishment) are represented, if we equate accomplishment with the feature 'competence', which was assessed by the item "Most days I feel a sense of accomplishment from what I do". Most of the constructs proposed by the other leading researchers mentioned above, whose models incorporate eudaimonic constructs, are also represented among the ten features of flourishing.

However, what the ten features do not include is psychodynamic constructs such as 'personal growth' or 'self acceptance' (Ryff 1989), or the construct of autonomy or self-determination, which is a central concept for Jahoda (1958), Ryan and Deci (2001), Ryff (1989), and Ryff and Keyes (1995). Autonomy was not included in our list of features because its opposite is not specified in DSM or ICD diagnostic criteria for depression or anxiety. That is, loss of autonomy is not regarded as a symptom of these disorders. This raises the question about the necessity of autonomy as an element in positive human functioning. Outside the clinical context, some cross-cultural researchers have suggested that while autonomy may be regarded as important for well-being in Western nations, it is less relevant in collectivist countries such as many in Asia and Africa (e.g. Diener et al. 1997; Markus et al. 1996).

We suggest that the new conceptual framework which we have developed is a useful contribution to the lively, ongoing debate about how well-being, mental health or flourishing should be characterised both for purposes of research and to inform policy. Rather than subjective well-being research *unintentionally* yielding mental health symptoms that mirror the symptoms of mental disorders (Keyes 2007) we have intentionally and systematically examined symptoms of the common mental disorders and proposed their mirror opposites as exemplifying the concept of mental health or flourishing.

It has been recognised for some time (e.g. Anderson et al. 1993; Whittington and Huppert 1996) that a clinical diagnosis such as depression represents an arbitrary cut point along a continuum. The cut point is intended to represent the severity at which the person is no longer able to function in their everyday life. It is encouraging that the Work Group developing DSM-V (due to be published in May, 2013), recommends that dimensional measures of symptoms be considered as an adjunct to clinical diagnosis (American Psychiatric Association 2011). Debate is ongoing about whether the cut point for some disorders, such as Generalised Anxiety Disorder, should be changed.

Nevertheless, diagnostic categories will remain at the core of DSM-V, and the indications are that the list of symptoms of depression and anxiety are likely to remain unchanged.

We have taken this categorical approach forward to develop an operational definition of flourishing and a measurement framework based on what we regard as the best available data. This comes from a very large, representative sample of individuals in 23 European countries. A total of 43,000 participants took part in the third wave of the European Social Survey (ESS; Jowell and The Central Co-ordinating Team 2003) which incorporated for the first time, a well-being module (Huppert et al. 2009). Using complete data from 22 countries (Hungary was excluded because they failed to assess vitality), we established appropriate cut points for the presence/absence of each feature of flourishing, followed by factor analysis to determine how best to combine these features into an operational definition of flourishing. Again, we were guided by the approach taken in establishing criteria for the common mental disorders, in which one or more symptoms are regarded as necessary for the diagnosis, along with the majority of the remaining symptoms. The operational definition which emerged from our analysis was based on the factor structure which had revealed two principal factors labelled 'positive characteristics' and 'positive functioning', along with a stand-alone hedonic item—positive emotion. Our operational definition was that in order to qualify as flourishing, a person had to show the presence of positive emotion together with all but one of the positive characteristics and all but one aspect of positive functioning.

In an earlier briefing document which we prepared for an OECD meeting (Huppert and So 2009), we used an operational definition which focused on depression as the opposite of flourishing. This document was cited by Seligman (2011) and Forgeard et al. (2011). The definition used in the present paper is more comprehensive, since it has considered the other common mental disorder, generalised anxiety, as well as depression.

Having derived our new operational definition on the total European sample, we used it to investigate differences in flourishing across regions and nations. After demonstrating model equivalence, we examined the prevalence of flourishing across the three European regions and found very marked differences, with high rates among Nordic countries, very low rates among Eastern European countries and large variation within Southern/Western Europe, with Switzerland being ranked second, and Portugal twenty-second.

These findings are broadly in line with international surveys using standard questions about happiness or life satisfaction measured around the same time (Böhnke 2005; Deaton 2008). Nordic countries consistently report the highest levels of happiness or life satisfaction. In addition to their relative wealth and low income inequality, explanations include well-developed social welfare and health care systems, low unemployment, high social trust, and ethnic homogeneity (Diener et al. 1995, 2010a; Haavind and Magnusson 2005; Hagerty 2000). Among Nordic countries, Denmark consistently ranks as the happiest nation in international surveys (Deaton 2008; Inglehart et al. 2008; Inglehart and Klingemann 2000), and among the explanations are low poverty and high welfare expenditure (Vogel 2002), as well as high levels of civil rights and individualism (Diener et al. 1995). At the other end of the scale, countries which were formerly under a Communist regime are less wealthy, have high income inequality, little welfare provision, less democratic institutions, more perceived corruption and poor governance (Böhnke 2005; Brainerd 2010).

Our finding that Portugal has the lowest subjective well-being in this study may seem puzzling, although its low well-being is in line with other findings (Böhnke 2005; Lima and

Nova 2006). Aside from its relatively low GDP and the large gap between its richest and poorest citizens, Portugal has the lowest level of education among all economically developed countries (an average of 8.5 years) (The Organisation for Economic Cooperation and Development 2007), and a very low level of social trust (World Values Survey 2007). Both of these factors typically show strong associations with low well-being (e.g. Dolan et al. 2008).

To gain a deeper understanding of the components of well-being, we compared region and country profiles across the different features of flourishing by examining the variations in ranking within each geographical area. Across the three regions, rankings show remarkable consistency. Nordic countries are ranked first, and Eastern European countries third, on all but one feature—vitality, where the position is reversed. Southern/Western European countries are ranked second on all ten features. The fact that Eastern European countries report the highest levels of vitality or energy is an entirely novel result, which requires further exploration.

At the country level, some nations showed consistently high (Denmark) or consistently low (Slovakia, Portugal) rankings, while others showed very marked variability in their rankings. Surprising data came from Norway whose rankings were typically high or average on all features, apart from self-esteem where they ranked 20 out of 22. Why Norwegians appear to have such low ranking on the self-esteem item ('In general I feel very positive about myself' is a matter for speculation. One possibility is that the low ranking reflects Norwegian modesty. However, modesty is also regarded as a characteristic of other Nordic countries (e.g. Smith et al. 2003), yet the other Nordic countries have much higher rankings on this item (Denmark 11, Finland 10, Sweden 8). France is a particularly interesting case, since it always does relatively poorly on measures of overall subjective well-being (usually life satisfaction or happiness) despite its wealth, short working hours, early retirement, and its commitment to leisure activities (Böhnke 2005; Diener and Suh 2000). Examination of the French profile across the ten features of flourishing may shed some light on this puzzle. Our data show both extremely high and extremely low rankings. France has the highest ranking of all countries on engagement, but has the lowest ranking on self-esteem, and is in the bottom two or three on optimism and positive relationships. Other countries, notably Bulgaria and Spain, also show extreme variations in rankings across features. A pattern of results such as these speaks volumes about the need for surveys to use multi-dimensional measures of subjective well-being.

The need for multi-dimensional measures of well-being is further supported by our data comparing the flourishing and life satisfaction measures. A standard measure of life satisfaction showed low correlations with almost all our features of flourishing. Similar findings have been reported in other studies (e.g. Chirkov and Ryan 2001; Diener et al. 2009; Ryff and Keyes 1995), indicating that a global measure of life satisfaction is no substitute for the information gained from a multi-dimensional approach. The one exception we found in our data was a high correlation (.68) between life satisfaction and happiness, indicating that they are measuring a very similar construct, probably hedonic well-being. Indeed, when we included life satisfaction in a factor analysis with the ten features of flourishing, we found that life satisfaction and happiness had very high loadings (>.83) on a 'positive appraisal' factor, on which no other feature had a significant loading. Other investigators (e.g. Dolan et al. 2008; Helliwell and Putnam 2004) have noted the close similarity between measures of overall life satisfaction and happiness. When we examined the relationship between life satisfaction and flourishing, we found a correlation of .34. At the individual level, the overlap was modest; around

half of those who were flourishing had high life satisfaction, and around one third of those with high life satisfaction were flourishing. Clearly, flourishing and life satisfaction are overlapping but distinct concepts, and a great deal would be lost by measuring life satisfaction alone, although there is frequently pressure in large scale surveys to do so.

4.1 Strengths, Limitations and Future Directions

The principal strengths of this study include: the relatively objective manner in which the basic features of flourishing were derived; the use of a psychometric approach to establishing an operational definition of flourishing; the application of the operational definition to a very large, representative, multi-national sample; and the use of structural equation modelling to establish measurement equivalents across geographic regions. We believe that this comprehensive investigation will help to advance our understanding of well-being, both conceptually and in terms of a measurement framework.

While our definition of flourishing and the resulting ten features were derived in as objective a manner as possible, some elements of subjectivity were unavoidable. Subjective judgements were involved in the selection of survey items to be used as indicators of these features, as well as the cut-off score on each item to establish whether it is present or absent, and the number of features required to meet the criterion of flourishing. We selected items from the European Social Survey (Round 3), because of its size, representativeness and comprehensive coverage of well-being; we chose item cut points based chiefly on their response format, but also made an adjustment if responses were very skewed; and the operational definition was largely based on the factorial structure of the data. Other studies which use different surveys and different items as indicators of the ten features of flourishing might reach a different conclusion about cut points and the number and combination of features required.

The present study examined measurement equivalence using multi-sample confirmatory factor analysis by regions. This serves as a starting point for similar analyses which should be conducted across the 22 individual countries in further studies to see if any differences are observed. This would help to ensure the validity of future studies which aim to understand the factors associated with national differences in flourishing.

In this study, we used a categorical approach to the definition of flourishing. This is because well-being science is at a relatively early stage, and we know almost nothing about the upper end of the well-being spectrum. Comparing average scores would provide no indication of the number of people who have very high (or very low) levels of flourishing. Further, a categorical approach is the appropriate method for establishing the prevalence of a condition—in this case the prevalence of positive well-being or flourishing, as well as the presence or absence of each feature of well-being. For future studies, we recommend a combination of continuous and categorical approaches so that one can measure the distribution of scores on each feature as well as variations in the overall measure of flourishing.

It would also be desirable to use several good items as indicators of each feature. Analysing existing data, as we did in the present study, it was not possible to find multiple good items per feature. It is interesting to note that two recently designed well-being scales, the Warwick-Edinburgh Mental Well-being Scale (Stewart-Brown et al. 2009; Tennant et al. 2007) and the Flourishing Scale of Diener et al. (2009) also use only one item per construct. Efforts to create multi-item, multi-dimensional measures of the features of

flourishing are currently underway for the five features corresponding to PERMA (Butler and Kern in preparation), and the present authors have begun a similar process for the remaining five features.

The data reported in this paper are from 2006/2007, 2 years before the severe economic recession from which many countries have since suffered. It would be very interesting to know if the recession has changed the prevalence of flourishing or its component features within and between countries, and the extent to which country rankings of the prevalence of flourishing may have altered. For instance, has the relative position of Ireland changed following the deep recession and severe spending cuts imposed at the end of 2010? Recent data from the Gallup World Poll show almost no impact of the economics crisis on subjective well-being in the UK (Crabtree 2010). However, Gallup used a single-item measure of life satisfaction (the Cantril ladder), and it would be valuable to know the way in which a multi-dimensional measure of well-being may have changed. Longitudinal analysis of the ESS data will be informative in this regard, when the well-being module is repeated in ESS Round 6 in 2012.

Governments around the world are taking a keen interest in the measurement of subjective well-being, with a view to measuring progress more effectively, improving their policy decisions, and increasing the well-being of citizens (e.g. Diener et al. 2009; Dolan and White 2007; Marks and Shah 2005; Stiglitz et al. 2009). Using a multi-dimensional approach to the measurement of well-being will enable them not only to establish which specific aspects of well-being have been impacted by policy changes, but also to identify the most promising levers of change. If a population group is high on some features of well-being such as positive relationships, but low on others such as engagement or resilience, it is clear where interventions should be targeted. Some economically-driven surveys might include only one or a few subjective well-being items, but the future lies in developing a deeper understanding of the multiple dimensions of well-being, how they are influenced by socio-economic factors, cultural values, secular shifts, and policy impacts. And above all, this deeper understanding of well-being and its determinants will allow us to develop effective approaches to the promotion of well-being and the enhancement of flourishing in the population.

Appendix

Deriving an operational definition of flourishing, using the opposite of the psychological symptoms of DSM-1V and ICD-10 diagnostic criteria for common mental disorders (depression and anxiety)

Symptom of disorder	Positive wording	Positive feature
DSM-IV—Major Depressive Episode		
5 (or more) symptoms present in same 2 week period. At least one must be (1) or (2)		
Depressed mood most of the day, nearly every day, as indicated by subjective report (e.g. feels sad or empty)	Positive mood (e.g. feels happy or has a sense of meaning)	Positive emotion Meaning
Markedly diminished interest or pleasure in all or almost all activities	Interest or pleasure in most activities	Engagement Positive emotion
Significant weight loss	–	–
Sleep problems nearly every day	–	–
Psychomotor agitation or retardation nearly every day	–	–
Fatigue or loss of energy	Vitality, feeling energetic	Vitality
Feelings of worthlessness or excessive or inappropriate guilt	Feelings of worth or worthwhileness (sense of purpose)	Self-esteem Meaning
Diminished ability to think, concentrate, make decisions	Capable of thinking clearly, concentrating, making decisions	Competence
Recurrent thoughts of death	–	–
DSM-IV—Generalized Anxiety Disorder		
Excessive anxiety and worry about events and situations for at least 6 months	Balanced emotional response	Emotional stability
Significant difficulty in controlling the anxiety and worry	Ability to manage anxiety and worry, emotional resilience	Resilience
3 or more of the following symptoms for most days over the previous 6 months:		
Feeling wound up, tense or restless	Feeling calm or relaxed, emotionally stable	Emotional stability
Easily becoming fatigued or worn out	Having sustained energy	Vitality
Concentration problems	Ability to concentrate	Competence
Irritability	Calm, even-tempered	Emotional stability

Appendix continued

Symptom of disorder	Positive wording	Positive feature
Significant tension in muscles	–	–
Difficulty with sleep	–	–
Global Assessment of Functioning (GAF)		
Used by mental health clinicians and physicians to subjectively rate the social, occupational, and psychological functioning of adults. The full scale is presented and described in the DSM-IV-TR on page 32. Positive features are listed as below		
Socially effective, has meaningful relationships	–	Positive relationship
Interested and involved in a wide range of activities	–	Engagement
ICD-10—F32 Depressive Episode		
The individual usually suffers from:		
Depressed mood	Positive mood (e.g. happy, cheerful, contented)	Positive emotion
Loss of interest and enjoyment	Interest and enjoyment	Engagement Positive emotion
Reduced energy leading to increased fatigability and diminished activity	Feeling energetic	Vitality
Other common features are:		
Reduced concentration and attention	Able to concentrate and pay attention	Competence
Reduced self-esteem and self-confidence	Self-esteem and self-confidence	Self-esteem
Ideas of guilt and unworthiness	Feelings of worth and worthwhileness (sense of purpose)	Self-esteem Meaning
Bleak and pessimistic views of the future	Feeling optimistic or hopeful about the future	Optimism
Ideas or acts of self-harm or suicide	–	–
Disturbed sleep	–	–
Diminished appetite	–	–

Appendix continued

Symptom of disorder	Positive wording	Positive feature
ICD-10—F41.1 Generalized Anxiety Disorder		
The sufferer must have primary symptoms of anxiety most days for at least several weeks at a time, and usually for several months. The symptoms should usually involve elements of:		
Apprehension (worries about future misfortunes, feeling "on edge", difficulty in concentrating)	Being at ease (optimism about the future, feeling calm or relaxed, ability to concentrate)	Optimism Calmness Competence
Motor tension (restless fidgeting, tension headaches, trembling, inability to relax); and	–	–
Autonomic overactivity (lightheadedness, sweating, tachycardia or tachypnoea, epigastric discomfort, dizziness, dry mouth, etc.)	–	–

Source: American Psychiatric Association (2000), World Health Organization (1992)

References

American Psychiatric Association (l994). *Diagnostic and statistical manual of mental disorders, 4th edn. revised. DSM-IV*. Washington, DC: Author.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington DC: American Psychiatric Association.

American Psychiatric Association (2011). *D05 mixed anxiety/depression*. Retrieved January 26, 2011 from http://www.dsm5.org/ProposedRevisions/.

Anderson, J., Huppert, F. A., & Rose, G. (1993). Normality, deviance and minor psychiatric morbidity in the community. *Psychological Medicine, 23*, 475–485.

Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science and Medicine, 36*, 725–733.

Böhnke, P. (2005). *First European quality of life survey: Life satisfaction, happiness and sense of belonging*. Luxembourg: Office for Official Publications of the European Communities.

Bradburn, N. (1969). *The structure of psychological well-being*. Chicago: Aldine.

Brainerd, E. (2010). Human development in Eastern Europe and the CIS since 1990. *United Nations Development Programme Human Development Research Paper 2010/16*.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Butler, J., & Kern, M. L. (in preparation). The well-being theory questionnaire.

Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS Windows: Basic concepts, applications, and programming*. Thousand Oaks, CA: Sage Publications.

Cheung, M. W. L., & Rensvold, R. B. (1999). Testing factorial invariance across groups: A reconseptualization and proposed new method. *Journal of Management, 25*, 1–27.

Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. *Psychosomatic Medicine, 70*, 741–756.

Chirkov, V. I., & Ryan, R. M. (2001). Parent and teacher autonomy-support in Russian and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-Cultural Psychology, 32*(5), 618–635.

Crabtree, S. (2010). Britons' wellbeing stable through economic crisis *Gallup,* November 24, 2010. http://www.gallup.com/poll/144938/Britons-Wellbeing-Stable-Economic-Crisis.aspx.

Deaton, A. (2008). Income, health and well-being around the world: Evidence from the Gallup World Poll. *Journal of Economic Perspectives, 22*, 53–72.

Diener, E., Diener, M., & Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology, 69*, 851–864.

Diener, E., Helliwell, J. F., & Kahneman, D. (Eds.). (2010a). *International differences in well-being*. New York: Oxford University Press.

Diener, E., Helliwell, J., Lucas, R., & Schimmack, U. (2009). *Well-being for public policy*. USA: Oxford University Press.

Diener, E., & Seligman, M. E. P. (2004). Beyond money: Toward an economy of well-being. *Psychological Science in the Public Interest, 5*, 1–31.

Diener, E., & Suh, E. M. (Eds.). (2000). *Culture and subjective well-being*. Cambridge, MA: MIT.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276–302.

Diener, E., Suh, E. M., & Sapyta, J. (1997). Cited in Diener, E., & Oshi, M. (2004). Are Scandinavians happier than Asians? Issues in comparing nations on subjective wellbeing. In F. Columbus (Ed.), *Politics and economics of Asia* (pp. 1–25). Hauppauge, NY: Nova Science Publishers.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D.-W., Oishi, S., et al. (2010b). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*, 143–156.

Dolan, P., Peasgood, T., & White, M. P. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective wellbeing. *Journal of Economic Psychology, 29*, 94–122.

Dolan, P., & White, M. P. (2007). How can measures of subjective well-being be used to inform public policy? *Perspectives on Psychological Science, 2*, 71–85.

Forgeard, M. J. C., Jayawickreme, E., Kern, M. L., & Seligman, M. E. P. (2011). Doing the right thing: Measuring well-being for public policy. *International Journal of Well-being, 1*(1), 79–106.

Haavind, H., & Magnusson, E. (2005). The Nordic countries-welfare paradises for women and children? *Feminism and Psychology, 15*, 229–237.

Hagerty, M. R. (2000). Social comparisons of income in one's community: Evidence from national surveys of income and happiness. *Journal of Personality and Social Psychology, 78*, 764–771.
Helliwell, J. F. (2003). How's life? Combining individual and notional variables to explain subjective well-being. *Economic Modelling, 20*, 331–360.
Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society B, 359*, 1435–1436. Reprinted in F. A. Huppert, B. Keverne & N. Baylis (Eds.), *The science of well-being* (pp. 435–459). London: Oxford University Press, 2005.
Huppert, F. A. (2009a). A new approach to reducing disorder and improving well-being. In E. Diener (Ed.) *Perspectives on psychological science*, *4*, 108–111.
Huppert, F. A. (2009b). Psychological well-being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well-being, 1*, 137–164.
Huppert, F. A., Marks, N., Clark, A., Siegrist, J., Stutzer, A., VittersØ, J., et al. (2009). Measuring well-being across Europe: Description of the ESS well-being module and preliminary findings. *Social Indicators Research, 91*, 301–315.
Huppert, F. A., & So, T. (2009). *What percentage of people in Europe are flourishing and what characterises them?* Briefing document for the OECD/ISQOLS meeting "Measuring subjective well-being: an opportunity for NSOs?" 23/24 July, 2009, Florence, Italy.
Inglehart, R. F., Foa, R., Peterson, C., & Welzel, C. (2008). Development, freedom, and rising happiness: A global perspective (1981–2007). *Perspectives on Psychological Science, 3*, 264–285.
Inglehart, R., & Klingemann, H. D. (2000). Genes, culture, and happiness. In E. Diener & E. M. Suh (Eds.), *Subjective well-being across cultures*. Cambridge, MA: MIT Press.
Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books.
Jowell, R., & The Central Co-ordinating Team. (2003). *European Social Survey 2002/2003: Technical report*. London: Centre for Comparative Social Surveys, City University.
Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*, 207–222.
Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *American Psychologist, 62*, 95–108.
Lima, M. L., & Nova, R. (2006). So far so good: Subjective and social wellbeing in Portugal and Europe. *Portuguese Journal of Social Science, 5*, 5–33.
Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*, 111–131.
Marks, N., & Shah, H. (2005). A well-being manifesto for a flourishing society. In F. A. Huppert, N. Baylis, & B. Keverne (Eds.), *The science of well-being*. Oxford: Oxford University Press.
Markus, H. R., Kitayama, S., & Heiman, R. J. (1996). Culture and "basic" psychological principles. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 857–913). New York: Guilford Press.
Marsh, H. W., Balla, J. R., & McDonald, R. P. (1998). Goodness-of-fit indices in confirmatory factor analysis: The effect of sample size. *Psychological Bulletin, 102*, 391–410.
Matsumoto, D., & Ven der Vijver, F. J. R. (Eds.). (2011). *Cross-cultural research methods in psychology*. New York: Cambridge University Press.
McManus, S., Meltzer, H., Brugha, S. T., Bebbington, P. E., & Jenkins, R. (2009). *Adult psychiatric morbidity in England, 2007: Results of a household survey*. London/Leeds: The NHS Information Centre for Health and Social Care.
Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.
Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin, 25*, 1509–1524.
Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141–166.
Ryff, C. D. (1989). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful aging. *International Journal of Behavioral Development, 12*, 35–55.
Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.
Ryff, C. D., Lee, Y. H., Essex, M. J., & Schmutte, P. S. (1994). My children and me: Mid-life evaluations of grown children and of self. *Psychology and Aging, 9*, 195–205.
Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry, 9*, 1–28.
Seligman, M. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfilment*. New York: Free Press.

Seligman, M. (2011). *Flourish: A visionary new understanding of happiness and well-being*. New York: Simon & Schuster.
Smith, P. B., Andersen, J. A., Ekelund, B., Graversen, G., & Ropo, A. (2003). In search of Nordic management styles. *Scandinavian Journal of Management, 19*, 491–507.
Steffick, D. E. (2000). Documentation of affective functioning measures in the Health and Retirement Study (Tech. Rep. No. HRS/AHEAD). Ann Arbor, MI: Survey Research Center, University of Michigan.
Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., & Weich, S. (2009). Internal construct validity of the Warwick-Edinburgh mental well-being scale (WEMWBS): a Rasch analysis using data from the Scottish health education population survey. *Health and Quality of Life Outcomes,* 715–722 (1477–7525)
Stiglitz, J., Sen, A., & Fitoussi, J.-P. (2009). *Report by the Commission on the Measurement of Economic Performance and Social Progress* (French Commission on the Measurement of economic Performance and social Progress).
Taillefer, M. C., Dupuis, G., Roberge, M. S., & Le May, S. (2003). Health-related quality of life models: Systematic review of the literature. *Social Indicators Research, 64*, 293–323.
Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., et al. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes, 5*, 63.
The Organization for Economic Cooperation and Development. (2007). *Education at a glance 2007: OECD indicators*. Paris: Author.
Van de Vijver, F., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Thousand Oaks, CA: SAGE Publications.
Vogel, J. (2002). Welfare production, poverty and wealth: A comparative and longitudinal perspective. In W. Glatzer (Ed.), *Rich and poor: Disparities, perceptions, concomitants* (pp. 235–270). Dordrecht: Kluwer.
Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS. *Journal of Personality and Social Psychology, 54*, 1063–1070.
Whittington, J. E., & Huppert, F. A. (1996). Changes in the prevalence of psychiatric disorder in a community are related to changes in the mean level of psychiatric symptoms. *Psychological Medicine, 26*, 1253–1260.
Widiger, T. A., & Clark, L. A. (2000). Toward DSM-V and the classification of psychopathology. *Psychological Bulletin, 126*, 946–963.
World Values Survey (2007). Retrieved from www.worldvaluessurvey.org.
World Health Organization (1992). *International statistical classification of diseases, 10th revision (ICD-10)*. Geneva, Switzerland: World Health Organization.
World Health Organisation (l993). *ICD-l0 Classification of mental and behavioural disorders: Diagnostic criteria for research*. Geneva: Author.