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The Authentic Happiness Inventory Revisited: Addressing its Psychometric Properties, Validity, and Role in Intervention Studies

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The Authentic Happiness Inventory Revisited:

Addressing its Psychometric Properties, Validity, and Role in Intervention Studies

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Abstract

The Authentic Happiness Inventory (AHI) is a frequently used measure for the subjective assessment of happiness and is primarily used in positive psychology intervention studies. It has been argued that it is sensitive to detect subtle changes in happiness and differentiates happiness at very high levels. We designed a series of studies to test some of the basic premises and to assess the reliability and validity of the German version of the AHI (total $N = 5166$). In Study 1, four independently collected samples provide evidence for its good psychometric properties and convergent as well as discriminant validity. Study 2 shows that the AHI has high test-retest correlations over a period of one week, and one, three and six months ($r = .75–.85$; $N = 319$). Also, the experience of positive life events went along with higher scores in the AHI. In Study 3, the AHI was used in a positive psychology intervention study by testing two well-established positive psychology interventions (i.e., "another door opens", and "three good things") against a placebo control group ($N = 400$ in total). Results show that the AHI reflects the expected changes in well-being (i.e., increase in the intervention in comparison with the placebo-control group). Overall, the three studies support the notion that the AHI has good psychometric properties and provides support for its validity. Potential further applications of the measure are discussed.

Keywords: AHI; Steen Happiness Index; well-being; test development; positive psychology interventions

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Positive Psychology is the scientific study of factors that allow individuals and communities to thrive (Seligman & Csikszentmihalyi, 2000). A basic requirement for conducting research in these areas is the availability of measures with well-established psychometric properties. A frequently used instrument for the assessment of *happiness* is the *Authentic Happiness Inventory* (AHI, Peterson, 2005; also called *Steen Happiness Index* in an earlier version of the instrument with fewer items; Seligman, Steen, Park, & Peterson, 2005). It was primarily developed for the use in positive psychology intervention (PPI) studies. PPIs are defined as "[…] treatment methods or intentional activities that aim to cultivate positive feelings, behaviors, or cognitions" (Sin & Lyubomirsky, 2009; p. 468). Despite its frequent use, basic information on the AHI's psychometric properties have not been described in full detail. For example, to the best of our knowledge, no data on its factorial validity or on its test-retest reliability have been published. In this study, we provide further information on its validity to make it better suitable for future research purposes.

The theoretical background for the construction of the AHI is Seligman's (2002) *Authentic Happiness*-theory. He proposes three distinguishable routes to happiness; namely, (a) the *life of pleasure* (i.e., the pursuit of hedonic experiences); (b) the *life of engagement* (i.e., the pursuit of flow-experiences); and (c) the *life of meaning* (i.e., the pursuit of purpose and meaning following a eudemonic principle). Accordingly, the authors of the AHI define happiness as assessed via their measure as "[…] experiencing and savoring pleasures, losing the self in engaging activities, and participating in meaningful activities"; Seligman et al., 2005; p. 414). The AHI provides a total score for happiness only. Seligman and colleagues (2005) argue that the AHI has certain advantages over other measures in this domain when used in intervention studies; namely, that data collected with the AHI are *less skewed* and that it yields a distribution that is "[…] more bell-shaped […]" (p. 415). Furthermore, the AHI

should also be less susceptible to ceiling effects, but more sensitive to (upward) changes in happiness, and, finally, it should demonstrate close relationships with different facets of happiness (such as the pleasurable, engaged, and meaningful life; Seligman et al., 2005). In 2011, Seligman revised his theory and suggested that *accomplishment* and *positive relationships* also contribute to human flourishing. Although first studies suggesting new measures for all components of Seligman's (2011) conception of flourishing have been developed (e.g., Butler & Kern, 2016; Gander, Proyer, & Ruch, 2016, 2017) that allow for assessing each of the components separately, the strong intercorrelations among these components suggest that one might still argue for the assessment of general well-being. If inspecting the items of the AHI one might further argue that these pursuits are also already partially covered there (e.g., "I feel I am extraordinarily successful", "I feel close to friends and family members"). Hence, the AHI seems to be a valuable indicator of general well-being, encompassing a broad array of hedonic and eudemonic concepts.

The AHI has already been frequently used in positive psychology intervention studies (e.g., Andrewes, Walker, & O'Neill, 2014; Gander, Proyer, Ruch, & Wyss, 2013; Mongrain & Anselmo-Matthews, 2012; Mongrain, Chin, & Shapira, 2011; Proyer, Gander, Wellenzohn, & Ruch, 2014, 2016; Proyer, Wellenzohn, Gander, & Ruch, 2014; Schueller, 2011, 2012; Senf & Liau, 2013; Sergeant & Mongrain, 2014; Shapira & Mongrain, 2010) and was also used in a broad range of other, non-intervention type studies (e.g., Ding, Mullan, & Xavier, 2014; Howell, Passmore, & Buro, 2013; Mullan & Xavier, 2013; Park, Monnot, Jacob, & Wagner, 2011; Parks, Della Porta, Pierce, Zilca, & Lyubomirsky, 2012; Proyer, 2014; Ruch, Proyer, Harzer, Park, Peterson, & Seligman, 2010; Schiffrin & Nelson, 2010; Toner, Haslam, Robinson, & Williams, 2012; Zabihi, Ketabi, Tavakoli, & Ghadiri, 2014). In a recent study, Kaczmarek, Bujacz, and Eid (2014) examined whether the AHI is more sensitive to *situational* changes than Diener et al.'s (1985) *Satisfaction with Life Scale* (SWLS) over three measurement periods within 15 months in a sample of young adults. The findings suggest that

both instruments converge well and were similarly related to occasion-specific influences in their sample. Hence, while the AHI did not outperform the SWLS in this study, it has detected occasion-specific changes. Although both allow for a subjective assessment of well-being and are usually strongly correlated, they might differ in their suitability for specific applications. Overall, the usage of the SWLS in positive psychology (intervention) studies seems best suited for interventions that address *cognitive* components of subjective well-being, while others may have a different focus and, therefore, may also require a somewhat broader framework and measurement. Additionally, measures that address a current time span (such as the past week in the case of the AHI), rather than life in general (such as the SWLS) might have advantages when aiming for the assessment of current changes (e.g., due to specific activities in positive psychology interventions).

As mentioned earlier, an in-depth examination of the psychometric properties of the AHI as well as its validity is missing. We aimed at narrowing this gap in the literature by conducting three studies with the German version of the AHI:

(a) Study 1 examines the psychometric properties of the scale and its relations with other widely-used well-being measures, indicators of positive psychological functioning, positive emotions, and personality in four samples;

(b) Study 2 examines the test-retest stability of the AHI and whether higher scores in the AHI are reported following positive life events; and

(c) Study 3 examines the usage of the AHI in a positive psychology intervention investigation to see whether it can reflect changes typically reported for well-established interventions.

All studies use different, non-overlapping samples.

Study 1

In Study 1, we first examine the psychometric properties of the AHI and test its unidimensionality by means of exploratory and confirmatory factor analyses in multiple

samples. This allows for a direct replication of the properties across independently collected sample. We expect that the data will be normally distributed and less prone to ceiling effects than comparable measures (for testing this specific notion, we will compare the distribution with the SWLS in the same data). To provide support for the convergent and discriminant validity of the AHI, we examine its relationship with other well-being measures, different indicators of positive psychological functioning, self-reported habitual levels of positive emotions, and broad personality traits. Three frequently used well-being measures and a depression scale were selected: The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985), a measure of global happiness (*Subjective Happiness Scale*, SHS; Lyubomirsky & Lepper, 1999), and a screening instrument for depressive symptoms (*Center for Epidemiologic Studies Depression Scale*, CES-D; Radloff, 1977). Since the AHI was developed to assess happiness in terms of the experience of pleasures, of losing oneself in engaging activities and the presence of meaningful activities, which refers to the three components of Seligman's (2002) Authentic happiness-theory, we also used the *Orientations to Happiness* scale (OTH; Peterson, Park, & Seligman, 2005). The OTH assesses the endorsement of these components. We expect that there will be an overlap between the AHI and the OTH without indicating redundancy. Likewise, we expect that the other indicators of subjective well-being will also be positively correlated with the AHI.

For a more thorough evaluation of the validity of the AHI, we also considered two indicators of positive psychological functioning, namely gratitude and grit. Gratitude has been linked to numerous positive outcome variables, such as subjective well-being (McCullough, Emmons, & Tsang, 2002), prosocial behavior (Bartlett & DeSteno, 2006), fewer physical symptoms (Emmons & Crumpler, 2000), and longevity (Danner, Snowdon, & Friesen, 2001). Grit, characterized as "[…] perseverance and passion for long-term goals" (Duckworth, Peterson, Matthews, & Kelly, 2007; p. 1087), has been linked to different success-related positive outcomes, such as the grade point average. We expected a positive relationship

between grit and gratitude, and the AHI, but coefficients should be lower than those found between the AHI and the other well-being measures.

For testing the relationship of the AHI with the experience of positive and negative emotions, we asked participants about their habitual experience of nine positive emotions (i.e., amusement, awe, contentment, gratitude, hope, interest, joy, love, and pride), and eight negative emotions (i.e., anger, contempt, disgust, embarrassment, fear, guilt, sadness, and shame; adapted from Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008). We expected that the AHI would be positively related to the experience of positive emotions, and negatively to negative emotions. Additionally, we expected that positive emotions would be better predictors of the AHI-scores than negative emotions.

Finally, we examined the relations of the AHI and the big five personality traits (as measured by the MRS-25; Ostendorf, 1990). It was expected that the AHI would demonstrate a similar relationship to the big five as other well-being measures (e.g., DeNeve & Cooper, 1998; Hayes & Joseph, 2003); namely, the numerically strongest relationship to emotional stability and extraversion, and that personality does not fully explain the variance in the AHI. Overall, the main aim of Study 1 was to provide data on the structure of the AHI (comparing multiple, independently collected, samples), item- and scale-statistics, and data on the convergent and discriminant validity in multiple samples. The multiple samples allow us to replicate the findings and provide a better estimate on the stability (across samples) of the properties of the AHI.

Method

Sample

Study 1 comprises four samples. Participants in Sample 1 and Sample 2 were from the general population and participated in two online positive psychology interventions that were conducted separately at two different time points. Participants in Sample 3 were students in a course on test development and they participated for course credit. Sample 4 was a general

population sample that took part in a brief study for the purpose of evaluating the AHI.

Sample 3 was collected in Switzerland, whereas Samples 1, 2, and 4 were collected online

across all predominantly German-speaking countries (i.e., Austria, Germany, Liechtenstein,

and Switzerland). Table 1 contains the descriptive statistics for all samples.

Insert Table 1 about here

Instruments

The *Authentic Happiness Inventory* (AHI; Seligman et al., 2005) is a subjective

measure for the assessment of happiness. Having been developed based on Seligman's (2002)

authentic happiness theory, it assesses "[…] experiencing and savoring pleasures, losing the

self in engaging activities, and participating in meaningful activities" (Seligman et al., 2005;

p. 414). The AHI consists of 24 sets of five statements from which the person has to choose

the statement that best describes his/her feelings in the past week. A sample set of statements

ranges from "I am usually in a bad mood" to "I am usually in a unbelievably great mood."

The instrument was used in the German version developed in Ruch, Proyer et al. (2010). The

German items are given as online supplementary material (Table A).

The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985; in a German version as

used by Ruch, Proyer et al., 2010) is a 5-item measure for the assessment of global, cognitive

satisfaction with one's own life. It uses a 7-point Likert-style scale (from 7 = "strongly agree"

to 1 = "strongly disagree). A sample item is "In most ways, my life is close to my ideal." The

SWLS is widely used in research and shows good psychometric properties (Pavot & Diener,

1993). Internal consistencies in the present study were high (Sample 1: α = .88, Sample 2: α =

.87).

The *Center for Epidemiologic Studies Depression Scale* (CES-D; Radloff, 1977; in the

German adaptation by Hautzinger & Bailer, 1993) is a 20-item measure for the assessment of

the frequency of depressive symptoms in the past week. It uses a 4-point Likert-type answer format (from 0 = "Rarely or None of the Time [Less than 1 Day]" to 3 = "Most or all of the time [5-7 Days]"). A sample item is "I thought I had been a failure." The CES-D has good psychometric properties and is one of the most frequently used measures for depression (Shafer, 2006). Internal consistency in the present study was high (Sample 1: α = .91; Sample 2: α = .90).

The *Orientations to Happiness* scale (OTH; Peterson et al., 2005; in the German adaptation by Ruch, Harzer, Proyer, Park, & Peterson, 2010) is an 18-item measure for the assessment of the endorsement of the three orientations to happiness; i.e., pleasure, engagement, and meaning (six items each). It uses a 5-point Likert-style scale (from 1 = "very much unlike me" to 5 = "very much like me"). A sample item is "My life serves a higher purpose" (meaning). Ruch et al. (2010a) report good psychometric properties and support for the validity of the German version. Internal consistencies in the present study were in the expected range (Sample 1: Pleasure: α = .73; Engagement: α = .66; Meaning: α = .76).

The *Subjective Happiness Scale* (SHS; Lyubomirsky & Lepper, 1999; in a German version as used by Ruch, Proyer, et al., 2010) is a 4-item measure for the global assessment of one's happiness. It uses a 7-point Likert-style scale with varying anchors. A sample item is "Compared with most of my peers, I consider myself" (from 1 = "less happy" to 7 "more happy"). Internal consistency in the present sample was high (Sample 3: α = .83).

The *Gratitude Questionnaire* (GQ-6; McCullough et al., 2002; in a German version as used by Samson, Proyer, Ceschi, Pedrini, & Ruch, 2011) is a 6-item measure for the assessment of one's experience of gratitude. It uses a 7-point Likert-style scale ranging from 1 (= "strongly disagree") to 7 (= "strongly agree"). A sample item is "I have so much in my life to be thankful for". Internal consistency in the present sample was satisfactory (Sample 3: α = .73).

The *Short Grit Scale* (GRIT-S; Duckworth & Quinn, 2009; in a German version as used by Samson et al., 2011) is an 8-item questionnaire for the subjective assessment of grit. It uses a 5-point Likert-style scale ranging from 1 (= "Not like me at all") to 5 (= "Very much like me"). A sample item is "I have overcome setbacks to conquer an important challenge". Internal consistency in the present study was satisfactory (Sample 3: α = .71).

The *modified Differential Emotions Scale* (mDES; adapted from Fredrickson et al., 2008; in a German version as used by Wellenzohn, Proyer, Gander, Hentz, & Ruch, 2014) consists of nine positive (e.g., "amusement") and eight negative emotions (e.g., "anger"). Participants are asked to indicate the intensity they experience with each emotion in general, ranging from 0 (= "not at all") to 4 (= "extremely").

The *Inventory of minimal redundant scales* (MRS-25; Ostendorf, 1990) is a bipolar list of 25 pairs of adjectives for the assessment of the lexical big five; extraversion, emotional stability, agreeableness, conscientiousness, and culture (similar to the intellect or openness factors in other big five measures). It uses a 6-point scale ("very" – "quite" – "rather" for each pole). Sample pairs of adjectives are "robust" vs. "vulnerable" (emotional stability), or "creative" vs. "uncreative" (culture). The MRS-25 has good psychometric properties and is frequently used in the German language area (Ostendorf, 1990). Internal consistencies in the present study (Sample 2) ranged from α = .76 (agreeableness) to α = .86 (conscientiousness).

Procedure

All participants in Samples 1, 2, and 4 were recruited over the Internet via mailing lists or media reports with a call for participation in the studies. Participants in Samples 1 and 2 who took part in an intervention program completed the questionnaires at baseline (i.e., before assignment to an intervention or a placebo control exercise). Participants in both samples completed the AHI, the CES-D, and the SWLS. Participants in Sample 1 also completed the OTH, and those in Sample 2 additionally completed the MRS-25 and the mDES. Participants in Sample 3 completed the AHI, the SWLS, the SHS, the GQ-6, and the GRIT-S in a paper-

pencil setting. Participants in Sample 4 were also recruited over the Internet and completed only the AHI and provided basic demographic information.

Participants in Sample 1 and 2 received an automatically generated feedback on their scores at the end of the study, and students received course credit upon request. Participants in Samples 3 and 4 did not receive any remuneration for their participation.

Results

Distribution Characteristics

First, we inspected the distribution characteristics of the AHI (see Table 2).

Insert Table 2 about here

As expected, the AHI was normally distributed. Further, it was *numerically* less skewed and had a lower kurtosis than the SWLS in the two samples where both measures were administered (SWLS: Sample 1: Sk = -0.36, K = -0.44; Sample 2: Sk = -0.31, K = -0.56), but the differences were only small in size. This was also true at the item level: The items of the AHI were numerically less skewed and had a lower kurtosis than those of the SWLS; the medians for the item *skewness* for AHI/SWLS in Sample 1 were 0.28/0.36 and 0.33/0.45 in Sample 2 and medians for the *kurtosis* were 0.48/0.69 and 0.52/0.53 for Sample 1 and 2, respectively. To examine potential ceiling effects, we have split the possible range of the scale means (SWLS: theoretical minimum = 1, theoretical maximum = 7, AHI: theoretical minimum = 1, theoretical maximum = 5) into ten equally spaced intervals (i.e., the breadth of the intervals was 0.60 for the SWLS and 0.40 for the AHI). Next, we compared the percentage of participants in Sample 1 (the largest sample) who scored in each of these intervals (see Table 3).

Insert Table 3 about here

Table 3 shows that considerably fewer participants scored in the highest categories of

the possible range in the AHI than in the SWLS. For example, 11.5% of the participants

scored in the top fifth of the possible range (9.3% in the ninth interval, and 2.2% in the tenth

interval) of the SWLS; only 0.7% of the participants did so in the AHI (0.6% in the ninth

interval, and 0.1% in the tenth interval).

Factor Structure

We conducted exploratory and confirmatory factor analyses with Mplus (Version

6.11; Muthén & Muthén, 2007) using a robust weighted least squares estimator (WLSMV;

see Flora & Curran, 2004) to evaluate the fit of the hypothesized model to the data

considering four criteria: The *comparative fit index* (CFI; current recommendations in the

literature suggest that values larger than .90 indicate an acceptable fit; Hu & Bentler, 1999),

the *root mean square error of approximation* (RMSEA; values smaller than .08 indicate an

acceptable fit; Browne & Cudeck, 1992), and the *standard root mean square residual*

(SRMR; values smaller than .10 indicate an acceptable fit; Kline, 2005). The χ^2-value was

also included, but was not used as a criterion for model evaluation due to its strong

dependency on the sample size (see Schweizer, 2010). Exploratory factor analysis was

applied to Sample 1 in order to provide information on the number of factors, while

confirmatory factor analyses (Samples 2, 3, and 4) were used to check whether the

hypothesized (one-dimensional) model fits the data.

In the exploratory factor analyses in Sample 1, a strong first factor emerged that

explained 47.7% (Sample 1) of the variance. The first five Eigenvalues were 11.44, 1.46,

1.09, 0.98, and 0.81.

Parallel analyses would have suggested the extraction of two factors. Since the two-

factorial solution would have been difficult to interpret (no simple structure would have been

obtained), and no theoretical rationale for a two-factorial solution existed, we accepted the

more parsimonious one-factorial solution (loadings for a two-factorial solution of Sample 1 are given as an online supplementary, Table C).

Next, we conducted a confirmatory factor analysis in Samples 2, 3, and 4; results are given in Table 4.

Insert Table 4 about here

The one-factorial solution widely met the criteria (only the RMSEA was slightly above the cutoff), and we decided to accept the one-factorial solution. Table 2 gives an overview on the factor loadings (the complete list of factor loadings for all samples is given as an online supplementary, Table B), and the scale statistics (total score) along with results of a reliability analysis and correlations with demographics. The factor loadings were $\geq .24$ in all samples with medians $\geq .60$. The corrected item-total correlations were high (median $\geq .51$). The AHI yielded high internal consistencies in the four samples ($\alpha \geq .91$). Multiple regressions predicting the AHI total score by demographic variables (age, gender, educational and relationship status) showed that they explained 3.1%/3.3%/0.8%/2.2% of the variance in the AHI in Samples 1 to 4 (not including information on the relationship status) and were, therefore, negligible.

Correlations with Other Well-Being Scales and Indicators of Positive Psychological Functioning

Partial correlations (controlled for sex, age, educational level, and relationship status) between the AHI, the SWLS, the CES-D, the OTH, the SHS, the GQ-6, and the GRIT-S are given in Table 5.

Insert Table 5 about here

As expected, the AHI correlated positively with the SWLS, the SHS, the GQ-6, the GRIT-S, and the three OTH-scales, but demonstrated a robust (negative) relationship with the CES-D. All three facets of the OTH were positively correlated with the AHI. An additionally conducted hierarchical stepwise regression analysis (criterion: AHI; predictors: Step 1 = age, sex, education, relationship status [method = enter] and Step 2 = OTH scales, method = enter) showed that pleasure, engagement, and meaning jointly explained 27.3% of the variance of the AHI (above and beyond demographics), whereas they explained 15.0% of the variance of the SWLS.

Correlations with Self-Rated Experience of Emotions

The AHI was positively related to the habitual experience of all tested positive emotions except for awe, and negatively related to specific negative emotions (i.e., contempt, embarrassment, fear, and guilt; mDES; Fredrickson et al., 2008), when controlling for sex, age, education, and relationship status (see Table 5). The multiple squared correlation coefficient between the positive emotions and the AHI was $R^2 = .48$ and it was $R^2 = .10$ for the negative emotions. For the SWLS, most correlations were numerically smaller. Multiple correlation coefficients were $R^2 = .35$ for positive, and $R^2 = .06$ for negative emotions. A direct comparison of the correlation coefficients (Olkin, 1967) revealed that the relationships with the AHI were larger than with the SWLS for depression, pleasure, engagement, meaning, gratitude, hope, interest, pride, and contempt (all $p < .05$). These differences remained stable when correcting for attenuation of the instruments.

Relationship with Personality

For assessing the relationship of the AHI with personality, we computed partial correlations between the AHI and a big five measure (MRS-25), controlled for sex, age, education, and relationship status. The strongest correlations of the AHI were found for emotional stability and it was also positively related to the other four factors of personality. The pattern of the correlation coefficients was in the expected range and direction of earlier

findings for other happiness measures (see e.g., DeNeve & Cooper, 1998; Hayes & Joseph, 2003). Relationships with the SWLS were larger for emotional stability, and culture. The big five personality traits explained 38% of the variance in the AHI and 26% of the variance in the SWLS in multiple regressions.

Discussion

Study 1 provides support for the notion that the *Authentic Happiness Index* (AHI) fits acceptably into a one-dimensional model, has high internal consistency, and shows the expected relationship to other well-being measures, indicators of positive psychological functioning, and the habitual experience of positive and negative emotions. In comparison to the SWLS, the AHI showed stronger relationships to many other indicators of well-being, such as the orientations to happiness, depressive symptoms, and emotions such as hope, interest, joy, or pride. Thus, these results might indicate that the AHI assesses a highly similar construct than other measures of well-being, but is stronger related to different aspects of happiness than comparable measures. This is also well reflected in the content of the AHI items that cover a broad array of aspects of well-being and thus allows for the assessment of a broad, general conceptualization of well-being. One might argue that – depending on the used framework of well-being – some items may rather be focusing on correlates than constituents of well-being. However, the items fit well into Seligman's (2002) conceptualization of happiness and also to a large extent to his (2011) conceptualization of flourishing, although more items on positive relationships would be needed in order to represent all five PERMA factors sufficiently.

Furthermore, it was shown that the AHI relates similarly to the big five personality traits as well as other well-being measures, and cannot be fully explained by personality. Emotional stability and extraversion demonstrated the numerically strongest relationships. Yet it needs to be acknowledged that the overlap was stronger for the AHI than for the SWLS.

Further, the distribution of the AHI was numerically closer to a bell-shaped curve—although the differences were rather small. It was shown that these differences are not only due to the larger number of items, but can also be observed at the item level. The AHI also seems less prone to ceiling effects in comparison with the SWLS. This makes it particularly suitable for usage in positive psychology intervention studies.

In addition to a very strong first factor, parallel analysis would suggest extracting an additional factor. However, a two-factorial solution would be difficult to interpret and not fit well with theoretical considerations. Since also all items had substantial loading on the first factor, the fit to a one-dimensional model can be considered acceptable. Also, across the samples, single indicators of fit were below the usually accepted threshold and point to room for improvement in future studies. Thus, some items revision could be considered in order to increase homogeneity

However, some limitations of the present study have to be noted. Samples 1 and 2 consisted mostly of women. Although demographics including gender were not related to the scores in the AHI, the findings should be replicated in more gender-balanced samples. The analysis of ceiling effects also needs further attention in the future since the breakdown of the data into ten categories is somewhat arbitrary and more data from extreme groups will be needed to further support the notion of the AHI being less prone to these effects. While the fit indices for a one-dimensional model were in the expected range, one item (item no. 3) needs further consideration in future studies. It demonstrated comparatively unsatisfactory factor loadings and corrected item-total correlations. It is possible that some might interpret this item (ranging from "When I am working, I pay more attention to what is going on around me than to what I am doing" to "When I am working, I pay so much attention to what I am doing that the outside world practically ceases to exist") more in direction of an obsessive engagement with work than as the presence of a flow-like state. Therefore, this item may be revised in future studies. Further items that might need revision in order to strengthen the intended one-

dimensional solution are items 8, 11, 12, and 19 that showed comparably lower factor

loadings. The items cover feeling close to others (item no. 8), how quickly time passes (item

no. 11), one's influence on the world (item no. 12), and the challenging of one's abilities

(item no. 19). Since there are other items tapping similar aspects of engagement, meaning, or

accomplishment (e.g., items no. 23, 4, or 9) that fit better into the one-dimensional model, a

revision seems possible. The only exception is the aspect of having positive relationships that

is not represented in the AHI except for item no. 8.

Study 2

The main aim of Study 2 was twofold. The first aim was testing the test-retest

correlation of the AHI for intervals of one week, one month, three months, and six months.

Although the AHI was designed to measure *current* levels of happiness, it was expected that

happiness would be relatively stable over time (see e.g., Kaczmarek et al., 2014). Seligman et

al. (2005) argue that the AHI should be sensitive to upward changes in happiness. Therefore,

the second aim of Study 2 was designed to examine whether the AHI is sensitive to the

experience of positive events. We examined the impact of positive life events (adapted from

the *Social Readjustment Rating Scale*; Holmes & Rahe, 1967) from different life domains;

namely, occupation, family, leisure, romantic relations, and personal growth. It was expected

that the experience of positive life events would be reflected in the AHI scores.

Method

Sample

See Table 1 for the description of the sample used in Study 2.

Instruments

As in Study 1, the AHI demonstrated high internal consistency ($\alpha = .93$). We also

asked the participants at the 3-months measurement time point whether they had experienced

one or more of five specific positive life events in the last two months; namely, whether they

started a new job, whether there was a gain of a family member, whether they have been on

vacation, whether they were in a new relationship, or whether they had an outstanding personal achievement (for all: 0 = no, 1 = yes). Additionally, we computed a total score composed of all five events.

Procedure

All participants in Study 2 took part in an online intervention program. The advertisement was similar to the one for Study 1 (i.e., using online resources and newspaper articles). However, there was no overlap in participants between studies 1 and 2. All adults were eligible for the program who: were currently not undergoing psychotherapeutic or psychopharmacological treatment, did not consume illegal drugs (all self-reported), did not have a professional interest in participating (i.e., no psychological coaches or journalists) and had regular access to the Internet. After registration, participants completed baseline demographic questionnaires and the baseline assessments of the AHI and were randomly assigned to intervention conditions or a placebo control condition. For this study, only participants assigned to the placebo control condition were analyzed (participants were instructed to write about early childhood memories for one week; "Early memories," Seligman et al., 2005). After they completed the placebo control intervention, as well as after 1-, 3-, and 6-months, all participants completed the AHI again. Additionally, at the 3-months retest, participants were asked whether they experienced one or more of the five positive life events during the past two months. The placebo control condition was already used in several studies (e.g., Gander et al., 2013; Seligman et al., 2005). These studies provide ground for the notion that it does not affect happiness, life satisfaction, or levels of depression. At the end of the study, all participants received an individualized, automated feedback.

Results

Test-retest correlations ($N = 319$) were .85, .81, .77, and .75 for the one week, one month, three months, and six months interval. For examining the impact of positive life events in the time span from the one to the three months retest, we computed partial

correlations between the AHI at the 3-months retest and the respective life event (0 = did not

occur; 1 = did occur) controlling for the scores in the AHI at the 1-month retest. Results are

given in Table 6.

Insert Table 6 about here

The table shows that those who were on vacation, who reported an outstanding

personal achievement, and those who were in a new relationship reported higher happiness

scores at the 3-months retest. A gain of a family member, and a new job, however, were not

associated with gains in the happiness scores. It needs to be considered that some events were

rather rare (i.e., 12 out of 319 participants reported the gain of family member; $n = 24$ started

a new job; and $n = 23$ a new relationship), whereas others were more frequently experienced

(i.e., vacation: $n = 170$; outstanding personal achievement: $n = 146$). Therefore, findings need

to be interpreted in light of the frequency of the occurrence of the single instances.

Discussion

Study 2 showed that the stability of the AHI over a period of up to six months is high

($\geq .75$ for intervals up to six months). It was also shown that the AHI is sensitive to detecting

changes in positive life events. Two positive events (i.e., gain of a family member, and a new

job) existed unrelated from the AHI. Aside from arguing that their positive effects were too

small to be detected, one might also argue that they could not be retrieved in the current data

since they occurred only rarely in the present sample. Also, these events do not have to be

positive; starting a new job and gaining a family member might both be highly stressful

events and are not necessarily deliberately chosen. Based on prior experiences, it seems

unlikely that the placebo intervention that participants in this study underwent has any effects

on happiness (e.g., Seligman et al., 2005), but, of course, it cannot be fully ruled out that there

may be effects for subgroups of participants; the stability coefficients are probably lower-

bound estimates only.

Study 3

One of the main aims in the development of the AHI (Seligman et al., 2005) was

having a sensitive measure for monitoring the effectiveness of positive psychology

interventions. The scale has already been used in numerous intervention studies, but it has not

been tested so far, as to whether the AHI is indeed more sensitive to changes than other

measures. Therefore, we conducted a placebo-controlled positive psychology intervention

study and aimed at comparing the outcomes for the AHI and Diener et al.'s (1985) SWLS.

Participants were randomly assigned to (a) the "one door closes, another door opens"-exercise

(i.e., writing about a negative event which had an unforeseen, positive consequence; see

Rashid & Anjum, 2008); (b) the "three good things"-exercise (writing down three good things

that happened on that day and reasoning why those things happened; Seligman et al., 2005);

or (c) a placebo control intervention (i.e., "early memories"; Seligman et al., 2005; full

instructions are available from the authors). Both interventions have been tested earlier (e.g.,

Gander et al., 2013; Mongrain, & Anselmo-Matthews, 2012; Seligman et al., 2005) and were

found to be effective. Additionally, we asked participants after the intervention, whether they

subjectively had the impression of having benefited from the interventions. It was expected

that the AHI would detect subtle changes in well-being and that the perceived benefit of the

interventions would be strongly related to the ratings in the AHI.

Method

Participants

A total of 1,021 adults registered on a website hosted by an institution of higher

education that offers free positive psychology programs. Of these, 300 were excluded because

they did not meet the inclusion criteria (i.e., younger than 18 years: $n = 2$; currently in

psychotherapeutic or psychopharmacological treatment: $n = 13$; consumption of illegal drugs:

$n = 15$; coaches or journalists with a professional interest in the interventions only: $n = 1$) or did not complete the baseline assessment ($n = 269$). The remaining 721 individuals were randomly assigned to three conditions; i.e., (a) "one door closes, another one opens"; (b) "three good things"; or (c) "early memories". Of these, 24 participants did not complete the assigned exercise and 297 participants dropped out during the follow-ups (i.e., lost to post-test: $n = 99$; one month: $n = 86$; three months: $n = 86$; six months: $n = 26$). The characteristics for the final sample of $N = 400$ ("another door opens": $n = 127$; "three good things": $n = 136$; placebo control: $n = 137$) participants are given in Table 1. Participants in the three conditions did not differ in their age ($F[2, 397] = 0.03$, $p = .97$, $\eta^2 = .00$), gender ratio ($\chi^2[2, N = 400] = 4.24$, $p = .12$), relationship status ($\chi^2[6, N = 400] = 4.38$, $p = .63$), or the educational level ($H[2] = 0.36$, $p = .84$). The baseline scores in the AHI ($F[2, 397] = 0.16$, $p = .85$, $\eta^2 = .00$) and in the SWLS ($F[2, 397] = 0.16$, $p = .86$, $\eta^2 = .00$) also did not differ among the three conditions.

An analysis of the dropouts (i.e., those who did not conduct the intervention or who did not complete the follow-ups) revealed that there were no differences in the baseline-scores of the AHI and the SWLS between the dropouts and those who completed all follow-up assignments; coefficients for the AHI were $F(1, 719) = 2.19$, $p = .14$, $\eta^2 = .00$, and $F(1, 719) = 0.94$, $p = .33$, $\eta^2 = .00$ for the SWLS. However, those dropping out earlier were, on average, 2.3 years younger ($F[1, 719] = 6.47$, $p = .01$, $\eta^2 = .01$), more frequently single ($\chi^2[3, 721] = 9.83$, $p = .02$), less well educated ($U = 58590$, $p = .02$), and men tended to be overrepresented ($\chi^2[1, 721] = 3.68$, $p = .06$) in comparison with those that completed all assessments.

Instruments

As in Study 1, the AHI ($\alpha = .93$) and the SWLS ($\alpha = .88$) were used. Additionally, participants were asked after the intervention, whether they benefited from the intervention (ranging from 1 = "No, not at all" to 5 = "Yes, very much").

Procedure

All participants took part in an intervention program with the same design as the one in Study 2, but all data were collected independently and there is no overlap in the participants. They were randomly assigned to one of the three conditions, completed the baseline questionnaires and were instructed to conduct the respective intervention on every evening for one week. We collected data on the AHI and the SWLS before the intervention, after the intervention, as well as 1-, 3-, and 6-months after the intervention.

Results

The mean scores and standard deviations for all conditions at all measurement time points are given in the online supplementary materials (Table D). For testing whether the AHI and the SWLS reflect the changes in happiness due to the intervention, we computed repeated measurement ANCOVAs, comparing each intervention separately with the placebo control condition, while controlling for the pretest measures. Results are given in Table 7.

Insert Table 7 about here

The table shows that for the "three good things"-intervention, both measures reflected higher scores in comparison to the placebo control condition (i.e., an effect for "condition" was found), whereas for the "another door opens"-intervention only the AHI indicated higher scores. A closer inspection for effects at the single time points for the AHI revealed that there was at least a marginally significant trend in the expected direction in both interventions at all time points (i.e., for up to six months). An inspection of the single time points for the SWLS showed that there was an effect in the expected direction for the "another door opens"-intervention at the three months follow-up, whereas for the "three good things"-intervention, there were effects or marginally significant trends at all time points. However, the overall effects (and the effects at almost all time points) were numerically larger in size for the AHI than for the SWLS.

The analysis of a single item-measure for the perceived benefit from the intervention (ranging from 1 to 5) showed that the full range of the item was used ($M = 3.20$, $SD = 0.76$) and most participants chose the middle category (i.e., "I benefited a little bit"). We computed partial correlations between the AHI and SWLS scores after the intervention week and the perceived benefit from the interventions, while controlling for the pretest scores. The AHI was related to the perceived benefit from the interventions in both intervention conditions (another door opens: $r = .37$, $p < .001$; three good things: $r = .22$, $p = .01$), whereas the SWLS was only related to the benefit in the "another door opens"-condition ($r = .23$, $p = .01$), but not in the "three good things"-condition ($r = .05$, $p = .59$).

Discussion

Study 3 shows that the AHI is sensitive to upward changes in happiness caused by a positive psychology intervention in a placebo-controlled design. Also, changes in the AHI reflect the participants' subjectively perceived benefit from the intervention. These results suggest that the AHI seems to be sensitive in detecting upward changes in (positive psychology) intervention studies. Further, the findings suggest that the AHI might be more sensitive for detecting such changes than the SWLS. However, this needs to be further examined in future studies.

A limitation of the present study is the large percentage of dropouts (44.5%). Although common in (online) intervention studies (cf. Mitchell, Vella-Brodrick, & Klein, 2010), dropouts might seriously distort the findings unless they are completely unsystematic, as we implied when analyzing only those participants who completed all follow-ups. However, there were neither differences in the AHI nor in the SWLS at baseline between dropouts and those who completed all post measurement time-points[1].

General Discussion

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[1] When conducting an intention-to-treat-analysis and estimating the missing values by replacing them with the previous scores („last observation carried forward"), or by a multiple imputation procedure, similar results for both instruments and interventions were obtained (with smaller effect sizes though).

The three studies showed that the AHI yields high internal consistency and test-retest correlations for a period of up to six months. Support for a one-factor solution was found in both exploratory and confirmatory factor analyses. Findings for the convergent and divergent validity were encouraging. Also, the AHI seems to capture relevant aspects of well-being, as was shown by its relations to positive life events, or subjective conceptualizations of benefiting from an intervention. Furthermore, the expectations of the authors of the AHI were mostly met: it seems to reflect different aspects of well-being (such as the orientations to happiness), its distribution is close to a normal distribution, ceiling effects are unlikely and it is sensitive to upward changes due to positive life events or a positive psychology intervention. From this perspective, one might argue for two main areas of applications of the AHI. First, when studying changes in well-being, its high reliability and sensitivity to changes might result in higher statistical power than what could be expected for other measures. Second, when studying groups of very happy people, the AHI might be the preferred measure since it allows for a more fine-grained distinction in happiness, also due its length.

Although we compared the AHI to the SWLS in some of the analyses, we do *not* argue for replacing the SWLS with the AHI. First of all, the two measures are conceptually not intended to overlap (although they are strongly correlated; see also Kaczmarek et al., 2014). The SWLS is, despite its brevity, a psychometrically sound measure for life satisfaction, which has proved its usefulness in numerous studies. Hence, while for most research cases (especially in large test batteries where short measures have an advantage) researchers may decide for the SWLS, in the case of intervention studies and in studies examining individuals with extreme expressions in happiness, the AHI may be a preferable measure.

One strength of the AHI is its relation to a theoretical framework; namely, Seligman's (2002) Authentic Happiness-theory. Further revisions might be indicated taking the two additional components suggested in his 2011 well-being theory into account (see also Gander

et al., 2017). Thus, further items might be included in the AHI in order to cover all relevant areas of well-being with multiple items.

Limitations of all three studies are that all of the data are self-report in nature, not representative of the general population, and that we do not have objective data on people's happiness and/or circumstantial factors. The intervention study provides strong evidence that the AHI can assess upward changes, but other data on the predictive validity of the instrument (also in comparison with existing scales) is missing. While we provide data on the convergent and divergent validity, some conceptualizations such as Ryff's work on psychological well-being (Ryff, 1989; Ryff & Keyes, 1995), Keyes's model on social well-being (Keyes, 1998), or flourishing (Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2010), to name but a few, were not yet covered.

Conclusion

Overall, the three studies show that the German AHI has good psychometric properties. Relationships with different indicators of well-being demonstrate that it covers well-being rather broadly, encompassing components of both, hedonic and eudemonic well-being. Further, the measure seems to be especially well-suited for the use in intervention studies due to its sensitivity for change. In future studies, the AHI might be further refined in order to account for advancements in well-being theories.

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Table 1

Demographics of all Samples Covered in the Three Studies

	Study 1				Study 2	Study 3
	Sample 1	Sample 2	Sample 3	Sample 4		
N	3789	259	184	215	319	400
Women %	78.3%	80.3%	52.7%	76.7%	81.5%	81.0%
Age						
Mean	45.49	40.83	32.42	32.80	46.74	47.03
Standard deviation	11.82	15.25	12.65	11.96	12.36	11.92
Range	17–84	19–85	18–71	18–69	18–77	19–86
Nationality[a]						
German	73.8%	63.3%	–	20.0%	71.2%	76.5%
Swiss	11.6%	29.7%	–	71.6%	14.4%	9.5%
Austrian	11.3%	4.6%	–	2.3%	11.3%	10.5%
Education						
University	59.6%	61.8%	52.2%	48.9%	58.0%	55.3%
Diploma	18.6%	20.5%	16.3%	24.7%	20.1%	22.8%
Vocational training	17.9%	15.1%	22.8%	20.0%	19.4%	18.5%
Elementary school	3.7%	2.3%	1.6%	6.5%	2.5%	3.5%
Did not complete school	0.2%	0.4%	0.5%	0.0%	0.0%	0.0%
No response	0.0%	0.0%	6.5%	0.0%	0.0%	0.0%
Relationship status						
In a relationship	68.6%	66.8%	37.0%	–	70.9%	74.8%
Single	18.1%	24.3%	58.2%	–	16.3%	12.8%
Divorced / in separation	11.5%	6.9%	3.3%	–	11.3%	10.8%
Widowed	1.9%	1.9%	0.5%	–	1.6%	1.8%
No response	0.0%	0.0%	1.1%	–	0.0%	0.0%

Note. University = University or university of applied sciences; Diploma = Holding a diploma allowing to attend a university or a university of applied sciences.

An em dash (–) indicates that data were not collected.

[a] Data on nationality was not available for Sample 3

Table 2

Descriptive Characteristics of the Authentic Happiness Index and Correlations with

Demographic Variables

	Sample 1	Sample 2	Sample 3	Sample 4
M	2.97	3.09	3.29	3.11
SD	0.58	0.51	0.45	0.56
Skewness	-0.23	-0.29	-0.38	-0.51
Kurtosis	-0.39	-0.47	1.01	-0.02
Loadings				
Minimum	.30	.30	.28	.24
Maximum	.84	.84	.81	.82
Median	.70	.61	.60	.68
CITC				
Minimum	.27	.26	.24	.22
Maximum	.75	.73	.69	.75
Median	.63	.54	.51	.60
Cronbach's α	.94	.91	.91	.93
Sex	.01	.08	-.06	.00
Age	.10***	.03	-.05	.12
Education	.08***	.15*	.02	-.03
Relationship	.12***	.06	−	−

Note. N = 3,789 (Sample 1), *N* = 259 (Sample 2), *N* = 184 (Sample 3), *N* = 215 (Sample 4).
CITC = corrected-item-total correlation, sex (1 = male, 2 = female), education (1 = not
finished compulsory school to 5 = university degree), relationship = relationship status (0 =
single, 1 = in a relationship).

*p < .05. **p < .01. ***p < .001.

Table 3

Percentage of Participants in Each Tenth of the Possible Scale Range

Possible Scale Range Intervals	AHI	SWLS
1. Interval	1.7%	1.4%
2. Interval	2.2%	3.6%
3. Interval	8.0%	6.4%
4. Interval	14.8%	11.1%
5. Interval	24.6%	14.5%
6. Interval	23.5%	16.6%
7. Interval	19.6%	17.6%
8. Interval	4.9%	17.5%
9. Interval	0.6%	9.3%
10. Interval	0.1%	2.2%

Note. N = 3,789 (Sample 1). AHI = Authentic Happiness Inventory; SWLS = Satisfaction With Life Scale.

Example: 1.7% of the participants scored in the bottom tenth (1. Interval) of the possible scale range of the AHI.

Table 4

Confirmatory Factor Analysis (One-Dimensional Solution) for the AHI-Items in Samples 2, 3, and 4.

	χ^2	*df*	*p*	CFI	RMSEA [90% CI]	SRMR
Sample 2	665.52	252	< .001	.92	.080 [.072–.087]	.076
Sample 3	530.24	252	< .001	.91	.077 [.068–.087]	.083
Sample 4	605.29	252	< .001	.94	.081 [.073–.089]	.073

Note. CFI = Comparative Fit Index, RMSEA = root mean square error of approximation, SRMR = standard root mean square residual.

Table 5

Partial Correlations Between the AHI, the SWLS, and Other Well-Being Measures and

Indicators of Positive Psychological Functioning, Controlled for Basic Demographics[a]

	AHI	SWLS
Satisfaction with Life[1/2]	.71*** / .72***	
Depression[1/2]	-.70*** / -.63***	-.52*** / -.58***
Subjective Happiness[3]	.71***	.68***
OTH[1]		
Pleasure	.37***	.28***
Engagement	.45***	.35***
Meaning	.38***	.26***
Grit[3]	.49***	.42***
Gratitude[3]	.50***	.45***
Positive Emotions[2]		
Amusement	.36***	.31***
Awe	.11	.11
Contentment	.57***	.53***
Gratitude	.40***	.37***
Hope	.60***	.48***
Interest	.37***	.25***
Joy	.51***	.42***
Love	.42***	.41***
Pride	.27***	.17**
Negative Emotions[2]		
Anger	-.13*	-.14*
Contempt	-.24***	-.14*

Disgust	-.12	-.07
Embarrassment	-.13*	-.08
Fear	-.26***	-.20**
Guilt	-.16**	-.12
Sadness	-.07	-.05
Shame	-.10	-.03
Personality[2]		
Extraversion	.37***	.29***
Emotional Stability	.57***	.50***
Agreeableness	.25***	.15*
Conscientiousness	.12*	.07
Culture	.27***	.15**

Note. [1] = Sample 1 ($N = 3,789$), [2] = Sample 2 ($N = 259$), [3] = Sample 3 ($N = 184$). AHI = Authentic Happiness Inventory, Depression = Center for Epidemiologic Studies Depression Scale (CES-D), OTH = Orientations to happiness, Subjective Happiness = Subjective Happiness Scale (SHS), Grit = Short Grit Scale (GRIT-S), Gratitude = Gratitude Questionnaire (GQ-6), Personality = Inventory of minimally redundant scales (MRS).
[a] = Correlations are controlled for sex, age, education, and relationship status.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 6

Partial Correlations Between the Experience of Positive Events and Scores in the Authentic

Happiness Inventory After the Events, Controlling for the Scores Before the Events.

	AHI
Vacation	.09*
Gain of a new family member	.07
Outstanding personal achievement	.21***
New job	.04
New relationship	.18***
Total	.23***

Note. N = 319. AHI = Authentic Happiness Inventory.

p < .05. **p* < .01. ***p* < .001.

Table 7

Repeated Measurement ANCOVA and Planned Comparisons for Each Time Point in the AHI and the SWLS Between the Intervention- and the

Placebo Control Condition

	ANCOVA			Posttest		1 month		3 months		6 months	
	df	*F*	η_p^2	*F*	η_p^2	*F*	η_p^2	*F*	η_p^2	*F*	η_p^2
AHI											
Another door opens	1, 261	4.09*	.02	1.66†	.01	2.25†	.01	4.24*	.02	2.59†	.01
Three good things	1, 270	7.67**	.03	6.93**	.03	1.78†	.01	5.91*	.02	6.54*	.02
SWLS											
Another door opens	1, 261	1.03	–	0.02	–	0.03	–	4.36*	.02	0.59	–
Three good things	1, 270	4.09*	.02	1.70†	.01	1.87†	.01	3.43*	.01	3.56*	.01

Note. AHI = Authentic Happiness Inventory, SWLS = Satisfaction with Life Scale. η_p^2 = Partial eta squared.

†*p* < .10. *p < .05. **p < .01. ***p < .001. (All one-tailed).

Online Supplementary Material I

Table A

The German Version of the AHI.

Aussagengruppe 1

Ich fühle mich wie ein Versager.

Ich fühle mich nicht wie ein Gewinner.

Ich fühle mich, als ob ich erfolgreicher war als die meisten Menschen.

Wenn ich auf mein Leben zurückschaue, dann sehe ich nur Sieg

Ich fühle mich außerordentlich erfolgreich.

Aussagengruppe 2

Für gewöhnlich bin ich schlechter Stimmung.

Für gewöhnlich bin ich neutraler Stimmung.

Für gewöhnlich bin ich guter Stimmung.

Für gewöhnlich bin ich großartiger Stimmung.

Für gewöhnlich bin ich unglaublich großartiger Stimmung.

Aussagengruppe 3

Wenn ich arbeite, dann schenke ich dem, was um mich herum passiert, mehr Aufmerksamkeit als dem, was ich tue.

Wenn ich arbeite, dann schenke ich dem, was um mich herum passiert, gleich viel Aufmerksamkeit wie dem, das ich tue.

Wenn ich arbeite, dann schenke ich dem, was ich tue, mehr Aufmerksamkeit als dem, was um mich herum passiert.

Wenn ich arbeite, dann nehme ich selten wahr, was um mich herum passiert.

Wenn ich arbeite, dann schenke ich dem, was ich tue, so viel Aufmerksamkeit, dass die Aussenwelt praktisch zu existieren aufhört.

Aussagengruppe 4

Mein Leben hat kein Ziel oder Sinn.

Ich kenne das Ziel oder den Sinn meines Lebens nicht.

Ich habe eine Vorstellung vom Sinn meines Lebens.

Ich habe eine ziemlich gute Vorstellung vom Ziel oder Sinn meines Lebens.

Ich habe eine sehr klare Vorstellung vom Ziel oder Sinn meines Lebens.

Aussagengruppe 5

Ich bekomme selten, was ich möchte.

Manchmal bekomme ich, was ich möchte und manchmal bekomme ich es nicht.

Ich bekomme etwas häufiger was ich möchte, als dass ich es nicht bekomme.

Für gewöhnlich bekomme ich, was ich möchte.

Ich bekomme immer, was ich möchte.

Aussagengruppe 6

Ich habe Sorgen in meinem Leben.

Ich habe weder Sorgen noch Freude in meinem Leben.

Ich habe mehr Freude als Sorgen in meinem Leben.

Ich habe viel mehr Freude als Sorgen in meinem Leben.

Mein Leben ist von Freude erfüllt.

Aussagengruppe 7

Die meiste Zeit über fühle ich mich gelangweilt.

Die meiste Zeit über fühle ich mich weder gelangweilt noch daran interessiert, was ich tue.

Die meiste Zeit über fühle ich mich daran interessiert, was ich tue.

Die meiste Zeit über fühle ich mich ziemlich daran interessiert, was ich tue.

Die meiste Zeit über fühle ich mich davon fasziniert, was ich tue.

Aussagengruppe 8

Ich habe keinen Zugang zu anderen Menschen.

Ich fühle mich anderen Menschen weder nah noch von ihnen abgeschnitten.

Ich fühle mich Freunden und Familienmitgliedern nahe.

Ich fühle mich den meisten Menschen nahe, auch wenn ich sie nicht gut kenne.

Ich fühle mich jedem Menschen auf der Welt nahe.

Aussagengruppe 9

Objektiv gesehen, komme ich schlecht voran.

Objektiv gesehen, komme ich weder gut noch schlecht voran.

Objektiv gesehen, komme ich eher gut voran.

Objektiv gesehen, komme ich ziemlich gut voran.

Objektiv gesehen, komme ich unglaublich gut voran.

Aussagengruppe 10

Ich schäme mich für mich selbst.

Ich schäme mich nicht für mich selbst.

Ich bin stolz auf mich.

Ich bin sehr stolz auf mich.

Ich bin aussergewöhnlich stolz auf mich.

Aussagengruppe 11

Die Zeit vergeht langsam bei den meisten Dinge, die ich tue.

Die Zeit vergeht schnell bei einigen Dingen, die ich tue und langsam bei anderen.

Die Zeit vergeht schnell bei den meisten Dinge, die ich tue.

Die Zeit vergeht schnell bei allen Dingen, die ich tue.

Die Zeit vergeht bei allen Dingen, die ich tue so schnell, dass ich es gar nicht bemerke.

Aussagengruppe 12

Im Großen und Ganzen betrachtet, könnte meine Existenz der Welt schaden.

Meine Existenz hilft der Welt weder, noch schadet sie ihr.

Meine Existenz hat einen kleinen, aber positiven Effekt auf die Welt.

Meine Existenz macht die Welt zu einem besseren Ort.

Meine Existenz hat einen andauernden, grossen, und positiven Einfluss auf die Welt.

Aussagengruppe 13

Die meisten Dinge mache ich nicht sehr gut.

Die meisten Dinge mache ich ordentlich.

In machen Dingen, die ich mache, bin ich gut.

In den meisten Dingen, die ich mache, bin ich gut.

Was auch immer ich mache, mache ich wirklich gut.

Aussagengruppe 14

Ich habe wenig oder gar keinen Enthusiasmus.

Mein Enthusiasmus-Level ist weder hoch noch niedrig.

Ich verfüge über einiges an Enthusiasmus.

Ich fühle mich enthusiastisch bei fast allen Dingen, die ich mache.

Ich habe so viel Enthusiasmus, dass ich das Gefühl habe, fast alles machen zu können.

Aussagengruppe 15

Ich mag meine Arbeit nicht (bezahlt oder unbezahlt).

Ich habe eine neutrale Einstellung meiner Arbeit gegenüber.

Großteils mag ich meine Arbeit.

Ich mag meine Arbeit sehr.

Ich liebe meine Arbeit wirklich.

Aussagengruppe 16

Ich sehe der Zukunft pessimistisch entgegen.

Ich sehe der Zukunft weder optimistisch noch pessimistisch entgegen.

Ich sehe ein bisschen optimistisch in die Zukunft.

Ich sehe ziemlich optimistisch in die Zukunft.

Ich sehe außerordentlich optimistisch in die Zukunft.

Aussagengruppe 17

Ich habe in meinem Leben wenig erreicht.

Ich habe in meinem Leben nicht mehr erreicht als die meisten Menschen.

Ich habe in meinem Leben ein bisschen mehr erreicht als die meisten Menschen.

Ich habe in meinem Leben mehr erreicht als die meisten Menschen.

Ich habe in meinem Leben wesentlich mehr erreicht als die meisten Menschen.

Aussagengruppe 18

Ich bin unzufrieden mit mir.

Ich bin weder zufrieden noch unzufrieden mit mir– ich bin neutral.

Ich bin zufrieden mit mir.

Ich bin sehr zufrieden mit mir.

Ich könnte mit mir nicht zufriedener sein.

Aussagengruppe 19

Meine Fähigkeiten, werden durch die Situationen, in die ich gelange, nie gefordert.

Meine Fähigkeiten, werden selten durch die Situationen, in die ich gelange, gefordert.

Meine Fähigkeiten, werden manchmal durch die Situationen gefordert, in die ich gelange.

Meine Fähigkeiten, werden durch die Situationen, in die ich gelange, oft gefordert.

Meine Fähigkeiten, werden durch die Situationen, in die ich gelange, immer gefordert.

Aussagengruppe 20

Ich verbringe alle meine Zeit damit, unwichtige Dinge zu tun.

Ich verbringe viel Zeit damit, Dinge zu tun, die weder wichtig noch unwichtig sind.

Ich verbringe täglich einen Teil meiner Zeit damit, Dinge zu tun, die wichtig sind.

Ich verbringe täglich den meisten Teil meiner Zeit damit, Dinge zu tun, die wichtig sind.

Ich verbringe praktisch jeden Moment eines jeden Tags damit, Dinge zu tun, die wichtig sind.

Aussagengruppe 21

Würde ich den „Spielstand meines Lebens" registrieren, dann würde ich hinten liegen.

Würde ich den „Spielstand meines Lebens" registrieren, dann würde ich in etwa bei einem Unentschieden liegen.

Würde ich den „Spielstand meines Lebens" registrieren, dann würde ich ein bisschen vorne liegen.

Würde ich den „Spielstand meines Lebens" registrieren, dann würde ich vorne liegen.

Würde ich den „Spielstand meines Lebens" registrieren, dann würde ich weit vorne liegen.

Aussagengruppe 22

Ich erlebe mehr Schmerz als Freude.

Ich erlebe Schmerz und Freude in gleichem Ausmaß.

Ich erlebe mehr Freude als Schmerz.

Ich erlebe viel mehr Freude als Schmerz.

Mein Leben ist von Freude erfüllt.

Aussagengruppe 23

Ich geniesse meinen Tagesablauf nicht.

Ich stehe meinem Tagesablauf neutral gegenüber.

Ich mag meinen Tagesablauf, bin aber froh wenn ich mal davon wegkomme.

Ich mag meinen Tagesablauf so sehr, dass ich ihn kaum durch Pausen unterbrechen möchte.

Ich mag meinen Tagesablauf so sehr, dass ich ihn fast nie durch Pausen unterbreche.

Aussagengruppe 24

Ich habe ein schlechtes Leben.

Ich habe ein ganz ordentliches Leben.

Ich habe ein gutes Leben.

Ich habe ein sehr gutes Leben.

Ich habe ein wundervolles Leben.

Table B

Factor Loadings of the One-Factorial Solutions of the AHI in All Samples.

	Sample 1	Sample 2	Sample 3	Sample 4
Item 18	.84	.82	.80	.81
Item 6	.82	.84	.76	.71
Item 22	.82	.74	.81	.80
Item 24	.81	.76	.74	.82
Item 21	.79	.70	.72	.74
Item 10	.77	.76	.61	.78
Item 2	.75	.66	.66	.72
Item 16	.75	.64	.68	.78
Item 9	.73	.66	.71	.72
Item 1	.72	.65	.58	.69
Item 7	.71	.58	.64	.69
Item 5	.70	.62	.51	.67
Item 14	.70	.60	.74	.67
Item 23	.70	.63	.58	.68
Item 17	.66	.58	.62	.66
Item 4	.62	.58	.55	.67
Item 15	.62	.53	.52	.63
Item 20	.60	.50	.42	.60
Item 13	.58	.47	.52	.60
Item 12	.57	.43	.53	.61
Item 11	.52	.40	.49	.48
Item 19	.52	.48	.56	.49
Item 8	.50	.49	.46	.43
Item 3	.30	.30	.28	.24

Note. N = 3,789 (Sample 1), *N* = 259 (Sample 2), *N* = 184 (Sample 3), *N* = 215 (Sample 4).
Loadings from Sample 1 are based on an exploratory factor analysis; loadings in Samples 2, 3, and 4 are based on confirmatory factor analyses.

Table C

Factor Loadings of the Two Factorial Solution of the AHI in Sample 1 (Promax Rotation)

	Factor 1	Factor 2
Item 6	**.94**	-.09
Item 22	**.92**	-.06
Item 24	**.74**	.12
Item 2	**.65**	.16
Item 16	**.60**	.21
Item 18	**.56**	.35
Item 1	**.52**	.27
Item 5	**.52**	.24
Item 21	**.48**	.38
Item 10	**.46**	.37
Item 20	-.13	**.78**
Item 19	-.18	**.74**
Item 7	.05	**.72**
Item 15	.02	**.65**
Item 14	.23	**.54**
Item 11	.04	**.53**
Item 13	.13	**.51**
Item 12	.12	**.50**
Item 4	.19	**.49**
Item 3	-.14	**.46**
Item 9	.35	**.45**
Item 23	.32	**.45**
Item 17	.28	**.44**
Item 8	.21	**.34**

Note. $N = 3,789$ (Sample 1). The highest loadings on each factor are printed in boldface.
Factor intercorrelation: $r = .69$.

Table D.

Means and Standard Deviations for the AHI and the SWLS in the Three Groups on the Five Time Points.

		Pretest		Posttest		1 month		3 months		6 months	
	N	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
AHI											
Another door opens	127	2.99	0.57	3.08	0.58	3.11	0.60	3.14	0.60	3.14	0.63
Three good things	136	2.96	0.56	3.09	0.55	3.08	0.58	3.13	0.59	3.16	0.60
Placebo Control	137	2.99	0.54	3.04	0.57	3.05	0.59	3.04	0.57	3.07	0.59
SWLS											
Another door opens	127	4.53	1.18	4.64	1.16	4.63	1.13	4.80	1.15	4.68	1.22
Three good things	136	4.49	1.19	4.70	1.19	4.71	1.22	4.74	1.19	4.74	1.23
Placebo Control	137	4.57	1.10	4.66	1.11	4.65	1.14	4.63	1.10	4.64	1.13

Note. AHI = Authentic Happiness Inventory, SWLS = Satisfaction with Life Scale.