

TECHNICAL REPORT

**The VIA Assessment Suite for Adults:
Development and Initial Evaluation**

Revised Edition

Robert E. McGrath, PhD.

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To communicate with the VIA Institute about any of the instruments described in this document, please contact VIA's Customer Experience Manager at chrisj@viacharacter.org.

To communicate with the author, please contact

Robert McGrath, Ph.D.
School of Psychology
Fairleigh Dickinson University
Teaneck NJ 07666
mcgrath@fdu.edu

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1. Rationale

The groundwork of empirical knowledge is observation and measurement. With the founding of a positive psychology dedicated to the scientific study of positive aspects of human functioning, the development of measurement tools for studying positive constructs became increasingly important. The study of positive character was explicitly identified as one of the key goals of positive psychology (Seligman & Csikszentmihalyi, 2000), and one of the most important contributions to pursuing this goal was the development of the VIA Inventory of Strengths (VIA-IS; Peterson & Seligman, 2004) for the measurement of character in adults (18 and over).

The VIA-IS provides a measure of the VIA Classification of Strengths and Virtues (Peterson & Seligman, 2004), the product of the most intensive effort to date to establish an enumeration of the dimensions comprising the concept of character. The VIA Classification focuses on 24 key character strengths, personality traits that characterize the positive and socially valued functioning of the individual. These are considered instantiations of six more abstract cultural virtues that are widely valued across cultures. This relationship is modeled hierarchically, mirroring the relationship between facet and domains constructs that predominates in current personality theory (Costa, McCrae, & Dye, 1991). However, the associations between the virtues and strengths were determined intuitively rather than empirically, presumably to mirror relatively universal cultural presumptions rather than specific characteristics of the VIA-IS scales. The VIA Classification is outlined in Table 1.

The VIA-IS has since been used in hundreds of studies investigating the nature of character, and completed several million times online by individuals who accessed either the Authentic Happiness website or the website of the VIA Institute on Character, the copyright

holder of the VIA-IS. Internal and test-retest reliability of the scales have been demonstrated to be adequate, self-report scores have been found to converge with peer ratings, and there is some evidence of discriminant validity when correlated with social desirability and political stance (Peterson & Seligman, 2004; Ruch et al., 2010). However, the inventory can be criticized on several grounds. These include the following:

- (1) Peterson and Seligman (2004) did not identify criteria used for item selection other than that the items did not detract from scale reliability.
- (2) Scale scores correlate substantially. This may well be inevitable to some extent given the probable existence of a positive manifold underlying goodness of character, but it is unclear to what extent such covariation could be minimized by considering level of correlation with other scales in item selection.
- (3) All items are positively keyed, allowing an acquiescent response bias to result in very high scores, and also potentially contributing to the emergence of the positive manifold.
- (4) At 240 items (10 items representing each of 24 strengths), the VIA-IS is quite long. A short form has been developed called the VIA-120, which consists of the five items from each scale demonstrating the highest corrected item-total correlations (CITC), its correlation with the sum of the remaining items from its parent scale, in a sample of 458,854 individuals who completed the VIA-IS online. This was introduced as an interim instrument until a more formal inventory development study could be conducted.
- (5) Though virtue measurement is a topic of some interest (e.g., Curren & Kotzee, 2014), direct measures of the virtues were not part of the original development project.
- (6) The six-virtue hierarchical model, which was based on a text analysis of materials from various moral traditions (Dahlsgaard, Peterson, & Seligman, 2005), does not emerge in

empirical studies of the 24 strength scales. The best model for the VIA-IS seems to be a five-factor model that overlaps substantially with the six-virtue model but is not identical.

(McGrath, 2014). The most replicable model of the 24 strengths—one that emerges across measurement devices—has consisted of three global factors that can be called Caring, Inquisitiveness, and Self-Control (McGrath, 2015), which does mirror various approaches to the concept of virtue (McGrath, Greenberg, & Hall-Simmonds, 2016).

(7) Peterson and Seligman (2004) introduced the idea of *signature strengths*, strengths that are particularly central to a person's identity. The concept is similar to that of cardinal traits in personality theory (Allport, 1961), traits that help define who a person is. The concept has since become popular both as a topic of research (e.g., Littman-Ovadia, Lavy, & Boiman-Meshita, 2016) and as a focus for feedback to individuals who complete the VIA-IS. However, since signature strengths represent strengths that on a conceptual level are qualitatively distinct from other strengths, the VIA-IS as a quantitative instrument is not an optimal tool for identifying such strengths. In particular, though algorithms have been developed for choosing among strengths with tied scores, these algorithms inevitably involve arbitrary elements. Reducing the number of items per scale exacerbates the problem, since it increases the likelihood of intra-individual ties. To be fair, the VIA-IS was not developed specifically with the intent of detecting signature strengths. The development of an instrument that uses a measurement model reflective of the nature of signature strengths would represent a more effective approach to the problem.

(8) Problems were identified with several of the scales in particular. Some items on the Spirituality scale focused on religious practices. This was seen as an obstacle to the instrument's universal adoption, both because of privacy issues and because it biased the

scale towards an ecclesiastical conception of spirituality. The Self-Regulation scale also had several items gauging health habits that could be considered sensitive or even protected information in employment settings.

- (9) The Leadership scale proved less cohesive than most (McGrath, 2014), because many of the items reflected fairness while in a leadership position rather than general leadership abilities. Problems were also noted with the Learning scale, which mixed items reflecting specific learning activities with items addressing the general love of learning.

Complicating the evaluation of the VIA-IS was the untimely death of its primary developer, Chris Peterson, in 2012. Since a full accounting of the development of the VIA-IS was never published, with his loss much of the procedural memory underlying the development of the instrument was lost as well. For example, it is unknown to what extent other criteria for item selection were implemented besides that listed in point 1 above.

Goals and Objectives

In 2014, the VIA Institute recognized the need for a set of character assessment instruments for which the development process is rigorously documented, and that fill purposes not optimally served by the VIA-IS. With the Institute's support, a series of research studies was conducted with the goal of updating the VIA-IS as part of a new set of instruments called the VIA Assessment Suite for Adults. This monograph summarizes those studies, which were conducted to meet the following objectives:

- (1) The development and validation of a revised version of the VIA-IS, the VIA-IS-R, that was shorter than the VIA-IS, included key-reversed items, demonstrated better differentiation between the constructs, and was developed with the goal of representing a diversity of item difficulties.

- (2) The development of a set of short forms for the VIA-IS-R sanctioned by the VIA Institute that are intended to serve various purposes.
- (3) The development of inventories comprised of subsets of items from the VIA-IS-R for the direct measurement of virtues.
- (4) The development of an alternative 72-item instrument called the Global Assessment of Character Strengths (GACS-72) that offered an alternative measurement model for the strengths, and a 24-item short form for this instrument (GACS-24).
- (5) The development of an instrument specifically intended to detect signature strengths, called the Signature Strengths Survey (SSS).
- (6) The development of new algorithms for the detection of signature strengths with the VIA-IS-R and its short forms.

Early in the process the decision was made to modify the Spirituality strength, shifting the focus away from religious practices. The goal was to broaden the context of this scale, particularly for people who object to the concept of spirituality as a faith-based concept. Initially, it was decided that the name of the scale would be changed, to Spirituality/Sense of Meaning, in light of the modified focus. However, it was noted in further discussion that the name Spirituality was more consistent with other literature on the VIA Classification, and the meaning of several scales was best conveyed through description of the content rather than the brief scale names. The final decision was to revert to the name Spirituality. Table 2 provides the revised list of 24 strengths, providing primary labels and a brief description of the person who is high on each strength. Note that the order of Humility and Modesty has also been reversed over time. These descriptions will be used as a link across instruments within the Assessment Suite.

Sample 1

One sample, which will be referred to as Sample 1, was particularly important to this research program. I will describe it here since this sample will appear in several of the sections that follow.

Sample 1 included 4,286 individuals who completed the English language version of the VIA-120 in return for personal feedback on their results at the VIA Institute website (www.viacharacter.org) between October 2015 and March 2016. The sample was 77.67% female and 22.33% male. Educational level was quite high: only 5.70% had not attended college, and 40.35% had gone to graduate school. The most common country of origin was the United States (50.91%), followed by Australia (10.87%), Canada (7.36%), and the United Kingdom (6.01%). The remaining 24.85% were from a variety of countries. Mean age was 45.55 years ($SD = 13.11$). The demographic statistics are consistent with those of previous studies that used online completion of the VIA-IS by unsolicited participants.

After completing the VIA-120, they were asked if they were willing to participate in a research project. Those who agreed were administered 309 additional items in the format used for the VIA-120 items, the GACS-72, the SSS, and a 48-item questionnaire consisting of two behavioral acts representing each of the 24 strengths. These will be described as they become relevant in the following sections. Note that the behavioral criteria were included more as a check on the results of the scale development than as a sufficient indicator of item or scale validity. The strength scales are intended for use in a variety of settings, so a comprehensive validation would have required a more substantial set of criteria. Given the length of the assessment, the behavioral items were kept to a minimum for this study. Under these

circumstances, internal criteria such as reliability and item information were given precedence in item selection.

2. Revision of the VIA Inventory of Strengths

Revision of the VIA-IS began with a complete review of the existing items. Analyses were conducted using a sample of 458,962 adults who had completed the VIA-IS online. Each item was evaluated using the following criteria:

- Flesch-Kincaid readability test scores (Kincaid, Fishburne, Rogers, & Chissom, 1975) were computed. The test as a whole required a 5th-grade reading level, with a reading ease score of 78.2. These were also computed for each item, revealing 40 items that required at least an 8th-grade reading level.
- The CITC for each item was compared with its correlation with the total score from the other 23 strength scales. There were 45 items that correlated more strongly with at least one of the other scales than its parent scale. There were also 29 items with a CITC < .40.
- Two-parameter item response theory (IRT) analysis using the graded response model was conducted in an exploratory manner with each scale (i.e., these analyses were conducted without concern for the standard assumptions underlying IRT). IRT analyses were conducted using the ltm package for R (Rizopoulos, 2006). These analyses revealed 38 items with item discrimination indices < 1.0.
- Literature reviews were conducted summarizing existing scales used to measure each of the 24 strengths outside the context of the VIA Classification. These reviews were distributed to three doctoral students who had also reviewed the discussion of the VIA character strengths provided by Peterson and Seligman (2004), and were familiar with research in character from the VIA perspective. These three students then reviewed each item and rated it on a 5-point

scale from *poor item* to *good definitional item*. There were 59 items with a consensus rating (the majority rating or, if there was no majority, the average rating) < 3 .

Several other statistics were reviewed as well, including the item mean (values of 4.33 or higher were considered problematic) and the IRT item characteristic curve.

After a lengthy review of the existing items, the same students who evaluated the VIA-IS items independently generated new items for each scale. They were particularly encouraged to generate reverse-keyed items, and to suggest revised or reverse-keyed modifications of existing items that had done poorly in the item review process. Each of these items were reviewed by the other two students and by the principal investigator, and included if two of the three reviewers considered it acceptable. In particular, reverse-keyed items were reviewed for use of negation terms such as NOT, which are known to complicate the interpretation of items, as opposed to antonyms for character terms.

The result was a pool of 309 items in addition to those on the VIA-120. These included 37 items from the original VIA-IS that were omitted from the VIA-120, so the initial pool for this revision included 157 items from the VIA-IS. Another 124 were revised versions of items contained in the original instrument. The pool included 119 items that were key-reversed. Information about the set of items representing each strength may be found in the left half of Table 3.

The following statistics collected from Sample 1 were used in the first round of item review:

- The CITC with the sum of the remaining items for that strength. A poor outcome was defined as a CITC $\leq .40$.

- The correlation with the sum of the two behavioral items for that strength. A poor outcome was defined as one where this correlation was $\leq .30$.
- The correlation of the item with the item sum for the other 23 strengths. A poor outcome was defined as one where the maximum absolute value of these 23 correlations exceeded the CITC for that item.
- Principal components analyses were generated for each of the 24 sets of strength items. A poor outcome was defined as a loading for the first unrotated principal component below .40.

Though considerations of internal reliability issues are central to this set of criteria, it is important to recognize that the theoretical model underlying the scale allows for some flexibility in the importance of inter-item associations. Some of the labels listed together in Table 1 encompass fairly distinct constructs, such as citizenship and teamwork, so that overly homogeneous items could demonstrate the problem Messick (1989) referred to as construct underrepresentation (see also Lucke, 2005). One goal of the revision was to balance the objectives of coverage of the component constructs and psychometric unidimensionality.

There were 29 items with at least three poor outcomes in the set of criteria listed above, and an additional 13 with two poor outcomes where the loading on the first unrotated component was $\leq .50$. These 42 items were eliminated from further consideration, reducing the item set to 387.

The analyses were repeated and the same statistics computed. This time there were three items that failed to meet the benchmarks listed above: one for Kindness, one for Social Intelligence, and one for Teamwork. In addition, unidimensionality/homogeneity of the remaining items was considered in preparation for conducting IRT analyses. Criteria for evaluating homogeneity were based on those developed for the Patient-Reported Outcomes

Measurement Information System (PROMIS; e.g., see Reeve et al., 2007). These analyses were conducted using polychoric correlation matrices as input data, to evaluate the items as polytomous scales in a manner consistent with IRT. A one-factor confirmatory factor analysis was conducted for each item set using the CALIS procedure in SAS version 9.4 (SAS Institute, 2013). Goodness of fit statistics did not support a one-factor structure in any set, a common outcome in confirmatory factor analyses with substantial numbers of observed variables (Floyd & Widaman, 1995), and particularly likely in the present case where some degree of multidimensionality is anticipated in the scales.

As in the PROMIS research, principal components analyses were then conducted within each strength set looking for evidence of homogeneity. The criteria used here were a first unrotated component that accounted for at least 40% of total variability, an eigenvalue for the first unrotated component that was at least four times that for the second, and/or promax rotation of the first two factors that resulted in an inter-factor correlation of at least .40.

Only one item set did not meet at least two of these criteria, that for Honesty. A review of CITCs and confirmatory factor analysis estimates of loadings resulted in elimination of five items from the Honesty items. Analyses were conducted a third time without these items as well as the three flagged via item statistics. In this round, all 24 item sets met the principal components analysis standard for homogeneity.

A two-parameter IRT analysis using the graded response model was conducted for the remaining items representing each strength. Afterwards, a final set of eight items was chosen for each strength based on the following considerations:

(1) A CITC $>$.40: All 192 of the final items met this criterion.

- (2) A CITC > the item's maximum correlation with the sum of any other scale set: There are only four items that did not meet this condition. Interestingly, elimination of items that were more reflective of other strengths had no impact on scale overlap. The mean correlation between all pairs of VIA-120 scales and between all pairs of VIA-IS-R scales were both .27, providing stronger evidence than was available from the VIA-120 that the overlap between the scales more likely reflects naturally occurring covariation among the strengths than an artifact of item selection.
- (3) Two statistics from the IRT were examined for each item. Item difficulty involved examining threshold parameters, particularly those for the highest response option. A positive value was considered desirable for the highest threshold parameter; only 10 items did not meet this standard. A slope of at least 1.0 was used as the minimum value for an acceptable item, and only four items did not meet this standard. Among items with acceptable values on the IRT statistics, preference was given to those demonstrating higher values. Figure 1 provides test information curves for the VIA-IS-R scales. The primary difference between these curves and those generated for the VIA-IS scales is a widening of the curve peak to the right, so that the scale maintains acceptable information values across a wider range of latent ability values. Of the 24 graphs, 15 indicate relatively high values for test information at one standard deviation above the mean, which can be a difficult standard to achieve with highly socially desirable latent variables. The exceptions are Beauty, Curiosity, Honesty, Hope, Humor, Learning, Love, Social Intelligence, and Spirituality.
- (4) Approximately equal numbers of positively and negatively keyed items per scale: Since preference was given to items with better statistical results, this goal was violated for several

scales. However, every scale included at least one reverse-keyed item, all but two included 3-4, and there are 81 reverse-keyed items (42.19%) in total, for an average of 3.375 per scale.

- (5) Use of items that were included in the original VIA-IS was preferred, to expedite the transition across versions. Note that the goal of including reverse-keyed items, which were omitted from the original VIA-IS, created a ceiling of approximately 58% on the percentage of items that could be included from the original inventory. The number of reused items was 91 (47.40%).
- (6) Item wording was considered in cases where there were several choices with similar statistical profiles. Considerations included the complexity of the item wording, avoiding items having to do with religious activities on the Spirituality scale, and avoiding items having to do with diet or exercise on the Self-Regulation scale.

The 192-item test as a whole requires a 4th-grade reading level (Flesch-Kincaid reading ease score = 79.6) even with the addition of negatively keyed items, and the number of items requiring an 8th-grade reading level or higher declined from 40 to 22. Basic item information for each scale may be found in the right half of Table 3.

Comparisons of items from the VIA-IS versus the revision demonstrated several instances where the scales became more homogeneous. The new Spirituality items focus solely on beliefs about non-physical reality; items covering religious practices have been removed. Items from the Self-Regulation scale focusing on specific health habits have been removed, and the remaining items focus exclusively on the general capacity for self-control. The Learning scale no longer includes items reflecting specific learning pursuits such as going to museums. Leadership items focus exclusively on general comfort and effectiveness as a leader; items having to do with treating other fairly (which correlated more highly with Fairness) or other

specific skills have been removed. Honesty items focus exclusively on honesty towards others; items about honesty towards one's self have been removed. Finally, the Humor scale now focuses on the use of humor in social situations. Items that had to do with using humor to help others feel better did not survive the item revision process. Though it could be argued that at least some of the item contents no longer represented on these scales are valuable, their inclusion with items representing other topics compromised effective scale interpretation.

For purposes of administration, item numbering was determined first by randomly ordering items within each strength. The first item for each strength was assigned sequentially to item positions 1-24 in alphabetical order of the strengths. The second item in each set was then assigned sequentially to positions 25-48, and so on. This meant for example that the Beauty items were assigned in random order to positions 1, 25, 49, etc., while those for Bravery were assigned positions 2, 26, 50, etc. The items for each strength therefore appear at regular intervals of 24 items, which is consistent with the original VIA-IS. This system simplifies the process of developing algorithms for scale scoring.

3. Variants of the VIA-IS-R

Short Forms

Two short forms of the VIA-IS-R were developed using the same data set. Each short form consists of 96 items, 4 items per strength, drawn from the VIA-IS-R scales. The VIA-IS-M ("Mixed") subscales consist of two positively keyed and two negatively items except in the case of Teamwork, which includes three positively keyed and one negatively keyed item. The VIA-IS-P ("Positive") subscales consist of four positively keyed items. Items were selected using the same criteria listed above for the VIA-IS-R item selection. Item numbers were assigned in the order items appear within the VIA-IS-R.

Shortening of the scales slightly reduced overlap among the strength scales. As noted previously, the mean bivariate correlation between scales on both the VIA-120 and VIA-IS-R was .27. The mean correlation between scales from the VIA-IS-M was .23, versus .26 for the VIA-IS-P. Interestingly, the main effect was on curtailing particularly large correlations. Where the VIA-120 and VIA-IS-R each demonstrated 15 correlations between scales $\geq .50$, this number declined to nine for the VIA-IS-M and ten for the VIA-IS-P.

Virtue Scales

As noted previously, the VIA Classification includes a model of virtue as well as a model of strengths. The hypothesis that virtues as abstract cultural principles and character strengths as culturally valued personal attributes will be hierarchically related (Peterson & Seligman, 2004) is one of the more distinctive features of the VIA Classification. Within the field of character education, a number of programs specifically focus on the topic of virtue. Examples include The Virtues Project, various initiatives of the Jubilee Centre for Character and Virtues at the University of Birmingham, the Intellectual Virtues and Education Project at Loyola Marymount University, and others. For this reason, the decision was made to develop scales specifically intended to measure virtues.

As suggested above, two models of the virtues have emerged in conjunction with the VIA Classification, one developed conceptually and the other empirically. The former is the six-virtue model introduced in conjunction with the original VIA Classification (Dahlsgaard et al., 2005; Peterson & Seligman, 2004). This model was developed through a review of authoritative texts from eight classical moral traditions that still influence the modern world: Athenian philosophy, Judaism, Christianity, and Islam from the West; Hinduism and Buddhism from south Asia; and Taoism and Confucianism from East Asia. The review identified six principles of a well-lived

life that emerged across all eight traditions: Wisdom and Knowledge, Courage, Humanity, Justice, Temperance, and Transcendence. Peterson and Seligman (2004) assumed it would be reasonable to expect that abstract cultural virtues should shape what personal attributes are considered a component of character, and so proposed the hierarchical mapping presented in Table 1 between the character strengths and virtues. Though Peterson and Seligman (2004) did not develop a measure of the six virtues, Ng, Cao, Marsh, Tay, and Seligman (2016) have recently used item-level exploratory structural equation modeling to develop a short form of the VIA-IS for which a bifactor model that includes the six virtues provides a model of acceptable fit. However, since this was based on the original item set, the development of a measure using the revised item set was necessary.

Empirical research has suggested a similar but distinct model for the strengths. McGrath (2015) proposed a model of virtue that emerged across four data sets involving various measures of the VIA strengths, a model that has since been replicated in eight more data sets (McGrath et al., 2016) from various populations, using various measures of the VIA strengths, and analyzed by a variety of methods. McGrath et al. (2016) have suggested this model offers a minimal list of the necessary components of a catalog of virtues. The three virtues that have reliably emerged from these analyses have been referred to as Caring, Inquisitiveness, and Self-Control.

Virtue measures were developed reflecting both the six-virtue model, since this is the best known virtue model associated with the VIA Classification, and the three-virtue model, since this appears to be the most reliable and empirically defensible framework for the character strengths. The former is called the VIA-IS-V6, the latter the VIA-IS-V3.

Several preliminary decisions shaped the development of the virtue scales. First, they were to be developed using items contained in the VIA-IS-R so that the scales could be

computed for individuals who complete the larger instrument. Second, each virtue scale would consist of 8 items, mirroring the VIA-IS-R strength scales. This meant that the VIA-IS-V6 would be 48 items long, and the VIA-IS-V3 would be 24 long.

For the Wisdom scale of the VIA-IS-V6, the VIA-IS-R items comprising the five component virtues for Wisdom and Knowledge (Creativity, Curiosity, Judgment, Learning, and Perspective) were treated as if they were a single scale for the purpose of computing a set of CITCs. Second, each of these items was correlated with the sum of the items for the other five virtue item sets (Courage, Humanity, etc.). This process was repeated for each of the other five virtues comprising the six-virtue model.

The same process was employed for the three-virtue model. A review of results from 12 factor analyses of data reflecting the VIA Classification (McGrath et al., 2016) suggested the following strengths as the most consistent and distinct exemplars of the three virtues: Fairness, Forgiveness, Kindness, Love, and Teamwork for Caring; Creativity, Curiosity, and Learning for Inquisitiveness; and Perseverance, Prudence, and Self-Regulation for Self-Control. Criteria for selecting items were different than those used for the development of inventories to this point, in recognition of the greater heterogeneity to be reflected in the virtue scales. Items were identified for possible inclusion based on three criteria: it generated one of the three highest CITCs within that strength, $CITC > .50$, and a CITC higher than the maximum correlation with the sum of items for the other virtues in the set. Also, at least one item was drawn representing each of the strengths comprising the virtue, though this requirement at times result in the inclusion of items with CITC values between .45 and .50. For both the VIA-IS-V6 and VIA-IS-V3, exactly 1/3 of items were reverse-keyed.

Though the restriction to items included in the VIA-IS-R means the virtue scales can be computed from the VIA-IS-R, there is also the option of administering only those items contained in the virtue scales, if other outcomes available from the VIA-IS-R (character strength scales and signature strength estimates) are not of interest. When administered exclusively, items on the virtue scales are numbered to match the sequence in which they appear in the VIA-IS.

Virtue scales can be computed for the VIA-IS-R short forms as well. Items were added to the virtue scales (14 for the VIA-IS-M, 4 for the VIA-IS-P) so that at least four items were available for each virtue scale on each short form and reliabilities for all scales exceeded .60. The VIA-IS-M V6 scales are comprised of 35 items, the V3 scales of 16 items. The VIA-IS-P V6 scales consist of 34 items while the V3 scales are comprised of 15 items.

Summary of VIA-IS-R Forms

In summary, there are four inventories comprised of subsets of items contained in the 192-item VIA-IS-R: the VIA-IS-M, VIA-IS-P, VIA-IS-V6, and VIA-IS-V3. The first is a 96-item short form of the VIA-IS-R that consists of a mix of positively and negatively keyed items. The second is another 96-item short form comprised solely of positively keyed items. The two virtue inventories provide measures of the six virtue model that is included in the VIA Classification, and of the three virtue model that tends to emerge in latent structural analyses. Presentation of further statistical analyses with these scales will be deferred until the entire suite of new measures has been introduced.

4. The Global Assessment of Character Strengths

The GACS-72 was not a completely new product of the current project. The VIA Institute had previously experimented with a variant of this instrument as part of its studies into signature strengths. It appeared in previous articles by McGrath (2015; Study 2), where it was

called the Signature Strengths Inventory; and McGrath, Greenberg, and Hall-Simmonds (2018; Study 1, Samples 3 and 12), where it was called the Personal Strengths Scale. Statistical analysis of those results had proven sufficiently positive to justify further study of the GACS-72, and its introduction as an instrument recommended for use by researchers. In particular, the GACS-72 provides the basis for the first single-item measure of the 24 character strengths generated under the guidance of the VIA Institute, the GACS-24.

The GACS-72 (see Appendix A) is not primarily intended to detect signature strengths, in that it does not attempt to draw a qualitative distinction between core and less focal strengths, its format was inspired by terms Peterson and Seligman (2004) used in connection with signature strengths. Specifically, they proposed that individuals would experience signature strengths as an essential part of who they are, as natural and effortless to express, and as uplifting or energizing to express. To capture these three attributes in a questionnaire, the GACS-72 begins by providing the 24 strength descriptions provided in Table 2, then asks the respondent to rate their agreement with 72 statements on a 7-point scale from *Very Strongly Disagree* to *Very Strongly Agree*. These 72 statements apply the three experiences of strengths to each of the 24 strengths.

The consistency in the format of the GACS-72 items could produce undesirable distributions for the resulting scales, with extreme negative skew being a particularly significant concern. Descriptive statistics for the 24 strengths in Sample 1 may be found in Table 4. Using ± 2 as a cutoff for excessive skew and ± 4 as the standard for excessive kurtosis (West, Finch, & Curran, 1995), the distributions are in fact quite symmetrical and mesokurtic.

A common practical problem in measurement is test length. Given the inclusion of 24 key dimensions in the VIA Classification, test length can be particularly problematic for researchers interested in studying character from the VIA perspective if this instrument is to be

used as part of a substantial battery of instruments. These issues often result in circumstances where a researcher or practitioner is interested in single-item versions of the 24 strengths. The level of interest in single-item measures of the VIA Classification is evident in the development of at least five different 24-item measures of the model (Cosentino & Solano, 2012; Furnham & Lester, 2012; Ruch et al., 2014; Vanhove, Harms, & DeSimone, 2016; Vie, Scheier, Lester, & Seligman, 2016). To date, however, there has been no single-item measure of the strengths approved by the VIA Institute.

The GACS-72 provided a basis for straightforward implementation of single-item measures, in that the instrument can be thought of as three 24-item sets that are consistent in format (*essential part of who I am, natural and effortless, and uplifting or energizing*). A review of CITCs within each of the 24 strength scales indicated any of the three would be an acceptable basis for a set of single-item instruments. However, these values were consistently higher for the *natural and effortless* set than the other two. Where the mean CITC for the *essential part* items was .73 and for *uplifting and energizing* items was .68, the mean CITC for the *natural and effortless* items was .77. These 24 items will therefore serve as the 24-item measure of the character strengths, called the GACS-24. That is, administration of the GACS-24 involves presenting the respondent with the first page of the GACS-72, which provides the descriptions of the 24 strengths, followed by the third page, containing the "natural and effortless" items (see Appendix A).

5. The Signature Strengths Survey

Though the format of the GACS-72 was influenced by discussions of signature strengths, there was also interest in a measure specifically intended to identify such strengths. Feedback from consumers of the VIA reports often suggests particular interest in the signature strengths

and their implications for personal functioning. Given the assumption of a qualitative difference between the signature strengths and other strengths, however, the use of a quantitative instrument such as the VIA-IS for the purpose of identifying signature strengths has limitations, particularly when the respondent generates a number of tied scores. Since the development of an instrument specifically intended to detect signature strengths required a different test format than the traditional dimensional scale structure, a series of three studies was conducted to inform the development of a measure of signature strengths, the SSS.

Study 1

The first study was a statistical analysis of data from 458,998 U.S. residents who completed the VIA-IS online between 2003 and 2011 intended to identify natural cutting points in the strengths when ranked from highest to lowest. For each participant, the 24 strengths were ordered from highest to lowest and 23 new variables were generated. The first of these new variables represented the difference between the person's highest and second highest strength score, regardless of which strengths those represented. The second was the difference between their second and third highest score, and so forth. In cases of ties this value equaled 0.

Figure 2 provides the change in mean value for each of these 23 variables. For example, the highest strength score was .13 points higher than the second highest score (scale scores are generated by averaging across items, so this is in comparison to a 1-5 score range). If signature strengths were to be operationally defined from a dimensional perspective as those that demonstrate a marked discrimination from less elevated strengths, which would mean larger mean difference, the results suggest several conclusions about the potential nature of signature strengths:

- (1) The first strength is clearly distinct from the second strength in terms of mean elevation, suggesting that a dominant signature strength emerges for many people.
- (2) The mean differences start to decline after that, leveling off after the sixth or seventh strength. This finding is consistent with results from preliminary interviews Peterson and Seligman (2004) undertook to explore the nature of signature strengths, where they found respondents tended to describe five strengths in terms suggestive of a signature strength.
- (3) The curve is U-shaped, but gradations are more extreme at the lower end of the scores. Differences start to increase again around the 14th highest score, and the last four differences are all larger than any of the differences at the top of the distribution except for the first. Respondents seem to draw a clearer distinction among those strengths that are not characteristic of them than among those that are. Given the strengths tend to be socially valued, this conclusion makes some intuitive sense.

Examination of Figure 2 suggests that, as a practical matter, respondents could generally be expected to identify 1-6 strengths as particularly signature for them, a number consistent with prior speculations that the focus on factor solutions of 5-8 factors in personality research reflects human limitations in the simultaneous processing of bits of information (Mershon & Gorsuch, 1988).

Study 2

The second preliminary study involved 24 undergraduates who earned research credit for their participation, and 17 non-university participants approached through personal connections with the researchers who agreed to complete the protocol, resulting a total sample of 41 participants. The mean age was 28.24 (range = 18-90); 58% ($n = 24$) were women. In terms of

ethnicity, 39.02% ($n = 16$) were Caucasian, 34.1% ($n = 14$) were Hispanic, 14.63% ($n = 6$) were African-American, and 12.2% ($n = 5$) were of Asian descent.

Participants completed a preliminary version of the SSS. This involved descriptions of the 24 strengths that were largely consistent with those found in Table 2. They were then asked to check those strengths “that are *absolutely essential* to you, that define *who you are as a person*, that are *part of who you are*.” They were also given the choice of checking an option that read *none of these characteristics is more essential to who I am than any of the others* (NOTC). They were then interviewed to address three questions:

- (1) If they chose NOTC, did they provide a reasonable rationale indicating this was a valid choice?
- (2) If they chose signature strengths, was there a strong rationale for their choices?
- (3) Were they able to reduce the number of signature strengths chosen when requested?

The first issue evaluated was whether any of the participants both checked one or more strengths and also checked NOTC, which would indicate a misunderstanding of the instructions. None of the participants committed this error, suggesting the instructions on the exclusivity of these two outcomes were effective.

Approximately 15% ($n = 6$) selected the NOTC option. Among the participants who selected the NOTC option, each was asked to explain their reasoning for checking this option. Their responses divided equally between those who based their justification on who they *are* (no strength was more important than any other to them), and those who based their justification on what *should be true* (no strength should be more important than any other to them). The tendency to respond in terms of personal aspirations is a known source of error in self-report measurement (Helzer & Dunning, 2012; Olson, Fazio, & Hermann, 2007).

The remaining 35 participants (87.8%) selected at least one signature strength. The range of strengths selected was 3-21 ($M = 11.34$, $SD = 5.38$). They were asked to justify three strengths chosen at random from those they checked. Across respondents, 22 different justifications were offered, as indicated in Table 5. The responses suggest participants generally understood they were focusing on strengths that define who they are (e.g., *part of who I am, essential*). In fact, the most common justifications had to do with either identity or personal flourishing, both of which are strongly associated with the concept of signature strengths (Peterson & Seligman, 2004). However, there were some rationales that indicated a focus on the positive benefits of the strength (*improves your life, strengthens social relationships, helped overcome challenges*).

Participants were then asked to review the strengths that they had checked and deem if any were more important to who they were as a person. Among the 35 participants who selected strengths, 25 (77.9%) were able to identify certain strengths that they considered more important in comparison to the ones that had already been selected. Among these 25, this process reduced the number of strengths selected by more than half ($M = 3.88$, $SD = 3.17$, range = 1-13). Consistent with prior evidence about signature strengths, most ultimately selected 1-7 strengths. Participants were asked to explain what made these strengths particularly important in comparison to the original list of strengths selected. Some of the most common explanations included overcoming challenges, personal morals, accomplishments, innateness, loss of self without them, and constant usage. Again, the rationales indicate an understanding of the concept of signature strengths.

The 10 participants who could not reduce their list further had selected an average of 8.7 strengths (range = 3-18). When asked to explain why they were not able to reduce the list further,

responses tended to focus on topics such as equal impact on their lives and the interaction of strengths in personal flourishing.

Based on these findings, two changes were made to the SSS. First, a reminder was added to the final paragraph of the SSS instructions to base choices on what is accurate rather than what is desirable. Second, after completion of the SSS, a final step was added asking the respondent to attempt to reduce the list further. In what follows, the initial selection will be referred to as Round 1, and the final selection as Round 2. Third, though this error is rare, when the SSS is administered electronically an algorithm is employed verifying that the respondent has not checked NOTC while also checking strengths before the results of the administration are accepted. The final version of the SSS appears in Appendix B.

Study 3

The final version of the SSS was administered to 4,131 members of Sample 1. On average, respondents checked 10.61 strengths in Round 1 ($SD = 5.24$). When asked to reduce this list further, the mean dropped to 5.50 ($SD = 4.40$). In both rounds the three most commonly endorsed strengths were Learning, Kindness, and Honesty, each endorsed by about 40% of respondents in Round 2, though after that the ordering became more variable across the two rounds (see the left half of Table 6). The three least commonly endorsed were Self-Regulation, Prudence, and Zest, each endorsed by about 10% in Round 2. Not surprisingly, given the Round 2 selections are bounded by Round 1 selections, the correlation between checking a strength in Round 1 versus Round 2 was .79.

Though the SSS offers the most direct method available of identifying strengths the individual experiences as central to their identity, it suffers statistically from the dichotomous score generated for each strength in Round 2 (checked/not checked). There is a way to increase

variability in the scores slightly, by recording a check in Round 1 and in Round 2 as a 1, recording a not-checked as a 0, and summing the score for the two rounds. This increases the possible scores from 0-1 to 0-2. This 0-2 score will therefore be the score reported when the SSS is administered. Since a score of 2 indicates a strength that was endorsed in both Rounds 1 and 2, a signature strength will be defined as a strength for which the SSS score is 2.

6. Signature Strength Algorithms

Before turning to a statistical comparison of the instruments developed in this project, one final modification of existing VIA testing practices was completed. As noted previously, an algorithm was developed for the estimation of signature strengths from the rank ordering of scores on the VIA-IS. The accuracy of this algorithm was always compromised by the potential for ties in the dimensional VIA-IS scores. Over time, the algorithm was revised, and increasingly sophisticated strategies were used to provide an optimal estimate of signature strengths. However, the algorithm even in its most recent form continues to use potentially arbitrary elements in decision-making.

The development of the SSS created the opportunity for a new algorithm for estimating signature strengths from VIA-IS-R scores that uses the frequency of a signature strength in the SSS Round 2 to assign relative precedence to the 24 strengths. In this new algorithm, choices between ties are decided on the basis of which strength more frequently emerges as a signature strength on the SSS. For example, if an individual generates a tie between Learning and Prudence, Learning will be given precedence in the identification of that individual's signature strengths, since results from the SSS indicated this is a substantially more frequent signature strength. The new algorithm essentially uses the SSS as the gold standard, and maximizes the

prediction of SSS results from the VIA-IS-R. This algorithm is also available for the VIA-IS-M and VIA-IS-P scales.

Table 6 provides a comparison of the percent of cases for which each strength was identified as signature according to the existing algorithm used for the VIA-120 and the new algorithm developed for the VIA-IS-R. The results are quite similar. For the VIA-120, the correlation between the percent identified for each strength and the corresponding value for Round 2 of the SSS was .77; this same correlation for the VIA-IS-R was .79. The mean number of signature strengths identified using the VIA-120 was 5.33 ($SD = 0.93$); for the VIA-IS-R the mean was 5.31 ($SD = .82$). Both are remarkably consistent with the mean value reported for the SSS (5.50) considering that the latter instrument allows the respondent to identify anywhere from 0 to 24 signature strengths, while the algorithms restrict the range to 4-7. Finally, across the 24 strengths the VIA-IS-R algorithm concordant with the SSS in 76.15% of cases, while the VIA-120 was concordant in 75.19%. The results suggest the VIA-IS-R algorithm was slightly superior to that used for the VIA-120.

7. Comparisons and Recommendations

Comparisons across Instruments

Table 7 provides correlations between the VIA-IS-R scales and corresponding scales from the other measures that have been discussed. The new inventory on average correlated .83 with parallel VIA-120 scales. It should be noted that shared items were only administered once, which could elevate the value of this mean. With this caveat in mind, the finding suggests that correlational results generated from previous versions of the VIA inventory should be relevant to the revised inventory as well. Overlap with the VIA-IS-R short forms is also substantial, suggesting that the latter can be effective proxies for the former. Correlations with the GACS-72

and GACS-24 scales were smaller but still exceeded .60 on average. The lowest level of convergence was found for the SSS, a predictable finding given the more dramatic differences between the two measure models.

Table 8 summarizes reliability statistics across the various measures generated in this project. For purposes of comparison, reliability statistics from an earlier sample of individuals who completed the original VIA-IS (240 items) are also provided. In all cases reliability estimates exceeded the commonly used standard of .60 (Fleiss, 1981; Landis & Koch, 1977; Shrout, 1998), and almost all were .70 or higher.

For the VIA-IS-R, all reliability coefficients were $\geq .77$, with an average of .85. The VIA-IS-R scale was more reliable than the corresponding VIA-120 scale in 21 of 24 cases, and more reliable than 18 of the longer VIA-IS scales, even with the addition of negatively keyed items and consideration of discriminant validity and IRT statistics in item selection.

As could be expected, reliability declined when the number of items was reduced from 8 to 4. Interestingly, reliability was almost exactly the same for the VIA-IS-M and VIA-IS-P scales on average despite the inclusion of negatively keyed items in the former set. It should be noted that the sample was highly educated, and this finding might not replicate in a sample demonstrating some form of cognitive impairment.

It is noteworthy that despite the brevity of the GACS-72 scales (three items per scale), all reliability coefficients exceeded .80, and two (Appreciation of Beauty and Spirituality) were above .90. The mean was .85, equivalent to that for the VIA-IS-R. It is also noteworthy that the majority of the virtue scales were associated with reliability coefficients $> .80$ despite the greater diversity of item content in those scales.

Reliability statistics discussed to this point have consisted of coefficient alpha values, a statistic that requires the aggregation of multiple items (usually three or more). Wanous and Hudy (2001) described methods for estimating the reliability of single-item indicators. They proposed that if the single-item indicator can be included in a factor analysis of a larger set of items converging on the same latent variable, the communality of an item can be treated as an estimate of the reliability of the single item. The three items from each GACS-72 scale were therefore submitted to an iterative principal axis factor analysis retaining a single factor, and the communalities for each of the natural and effortless items are provided in Table 8 as reliability estimates. As could be expected, in every case the GACS-24 reliability estimate was lower than that for the corresponding three-item GACS-72 scale. However, the mean reliability estimate was actually slightly higher than those for the VIA-IS-M and VIA-IS-P. The results provide further support for the use of the GACS-24 items as single-item indicators of the strengths.

Table 9 provides correlations between the scales and the corresponding behavioral measure. As noted already, these criteria do not represent a comprehensive survey of behaviors that should be related to each strength. However, general patterns reflected in the means for the columns provide useful information about the different instruments as a whole.

The VIA-IS-R on average was the best single predictor of these criteria. Since the criteria were used in part to select items (though other considerations were weighted more highly), this finding must be replicated before it can be interpreted as evidence of a predictive superiority for the VIA-IS-R over earlier VIA inventories. Both the VIA-IS-M and VIA-IS-P scales on average were about as effective as the VIA-IS-R, again supporting their use as short forms for the VIA-IS-R.

Not unexpectedly, the shorter GACS-72 and SSS scales were on average less accurate predictors of the criteria, with the SSS scored on a 0-2 scale demonstrating the lowest mean criterion-related validity coefficient. Reducing the length of GACS scales from three to one item had little impact on mean validity coefficients.

Recommendations

The scale development process outlined in this monograph has generated a large number of assessment instruments. The following set of recommendations is intended to provide guidance to researchers and practitioners in deciding which instruments best fit their needs:

- (1) The 192-item VIA-IS-R is the premier instrument for the assessment of the VIA Classification. Items were chosen for the optimal combination of item statistics, item wording, and balanced keying. The length means that rank ordering will result in a relatively lower rate of ties than is true for other instruments, which is helpful in the context of personal counseling. Given its greater length, it is not surprising that the mean reliability of the VIA-IS-R scales exceeds that of any other scale set except the GACS-72. Its larger diversity of items should also make it the most predictive instrument, and preliminary statistics in Table 9 are consistent with that hypothesis though far from conclusive. It also allows for scoring of the VIA-IS-V6 and VIA-IS-V3 scales as well as estimation of signature strengths. Unless there are compelling reasons otherwise, the VIA-IS-R should be the default choice.
- (2) When the goal is to balance psychometric considerations and test length, the two 96-item versions should be considered. The VIA-IS-M, for which the number of positively and negatively keyed items is approximately equal, is a better choice when response sets of yea-saying (a tendency to respond to items positively regardless of content), nay-saying (a similar tendency to respond negatively) or random or careless responding are considered a

possibility. It should be noted that research on the factor structure of the VIA-IS-R or VIA-IS-M will need to consider keying factors not relevant for such studies of the VIA-IS-P (e.g., McLarnon, Goffin, Schneider, & Johnston, 2016). When respondents are engaged but there are significant concerns about their cognitive capacity, however, the VIA-IS-P might be a better choice, since positively keyed items on average are associated with lower cognitive demands. Though reliability was consistent across the two short forms, future research is needed to determine if the two forms have equivalent reliability when used with adults with cognitive impairment.

- (3) When length is the primary consideration, the GACS-72 provides a brief 72-item measure with good psychometric features. The consistency in the formatting of the items means the GACS-72 can be completed more efficiently than other instruments of similar length. Brevity is maximized further by using the GACS-24. However, note that despite equivalence with the VIA-IS-R in terms of reliability, Table 9 indicates the former is as effective as a predictive instrument.
- (4) When the SSS is used, a score of 2 for a strength is considered the gold standard for identifying signature strengths, since it is the only case in which the respondent is explicitly asked to identify strengths that are qualitatively more relevant to who they see themselves as a person. However, the SSS should only be used in those circumstances where the administrator's key goal is the identification of signature strengths, since criterion-related validity of the SSS will inevitably be less than that found for other instruments given the narrowness of the 0-2 scale.
- (5) All instruments in the VIA Assessment Suite for Adults are available free of charge. To use any of the instruments described in this report, you must complete a Research Submission

Form at <https://www.viacharacter.org/research/conduct-a-study>. You can administer the versions of the VIA Inventory and SSS through the VIA website, through a website of your choice, or by paper-and-pencil once you have had your Research Submission Form approved. If you choose either of the last two options, you can request an offline version.

- (6) The GACS is an offline assessment that, once you have had your Research Submission Form approved, can be downloaded for your use in paper-and pencil or use via Qualtrics. However, administration through the VIA website is no longer available.

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Table 1

The VIA Classification.

Virtues	Character Strengths
Wisdom and Knowledge	Creativity [originality, ingenuity] Curiosity [interest, novelty-seeking, openness to experience] Judgment & Open-Mindedness [critical thinking] Love of Learning Perspective [wisdom]
Courage	Bravery [valor] Perseverance [persistence, industriousness] Honesty [authenticity, integrity] Zest [vitality, enthusiasm, vigor, energy]
Humanity	Capacity to Love and Be Loved Kindness [generosity, nurturance, care, compassion, altruistic love, "niceness"] Social Intelligence [emotional intelligence, personal intelligence]
Justice	Teamwork [citizenship, social responsibility, loyalty] Fairness Leadership
Temperance	Forgiveness & Mercy Modesty & Humility Prudence Self-Regulation [self-control]
Transcendence	Appreciation of Beauty and Excellence [awe, wonder, elevation] Gratitude Hope [optimism, future-mindedness, future orientation] Humor [playfulness] Religiousness & Spirituality [faith, purpose]

Note. Terms in brackets are variants of the character strength according to Peterson and Seligman (2004).

Table 2

Revised List of Strengths and Descriptions.

-
- Appreciation of Beauty & Excellence:** You notice the beauty and excellence around you; you are often awe-struck by beauty, greatness, and/or the moral goodness you witness; you are often filled with wonder.
- Bravery/Courage:** You face your fears and overcome challenges and adversity; you stand up for what is right; you do not shrink in the face of pain or inner tension or turmoil.
- Creativity:** You are viewed as a creative person; you see, do, and/or create things that are of use; you think of unique ways to solve problems and be productive.
- Curiosity:** You are an explorer; you seek novelty; you are interested in new activities, ideas, and people; you are open to new experiences.
- Fairness:** You believe strongly in an equal and just opportunity for all; you don't let personal feelings bias your decisions about others; you treat people the way you want to be treated.
- Forgiveness/Mercy:** You readily let go of hurt after you are wronged; you give people a second chance; you are not vengeful or resentful; you accept people's shortcomings.
- Gratitude:** You regularly experience and express thankfulness; you don't take the good things that happen in your life for granted; you tend to feel blessed in many circumstances.
- Honesty:** You are a person of high integrity and authenticity; you tell the truth, even when it hurts; you present yourself to others in a sincere way; you take responsibility for your actions.
- Hope:** You are optimistic, expecting the best to happen; you believe in and work toward a positive future; you can think of many pathways to reach your goals.
- Modesty/Humility:** You let your accomplishments speak for themselves; you see your own goodness but prefer to focus the attention on others; you do not see yourself as more special than others; you admit your imperfections.
- Humor:** You are playful; you love to make people smile and laugh; your sense of humor helps you connect closely to others; you brighten gloomy situations with fun and/or jokes.
- Judgment/Critical Thinking:** You are analytical; you examine things from all sides; you do not jump to conclusions, but instead attempt to weigh all the evidence when making decisions.
- Kindness:** You do good things for people; you help and care for others; you are generous and giving; you are compassionate.
- Leadership:** You positively influence those you lead; you prefer to lead than to follow; you are very good at organizing and taking charge for the collective benefit of the group.
- Love of Learning:** You often find ways to deepen your knowledge and experiences; you regularly look for new opportunities to learn; you are passionate about building knowledge.
- Love:** You are warm and genuine to others; you not only share but are open to receiving love from others; you value growing close and intimate with others.
- Perseverance:** You keep going and going when you have a goal in mind; you attempt to overcome all obstacles; you finish what you start.
- Perspective/Wisdom:** You take the "big picture" view of things; others turn to you for wise advice; you help others make sense of the world; you learn from your mistakes.

Prudence: You are wisely cautious; you are planful and conscientious; you are careful to not take undue risks or do things you might later regret.

Self-Regulation: You are a very disciplined person; you manage your vices and bad habits; you stay calm and cool under pressure; you manage your impulses and emotions.

Social Intelligence: You pay close attention to social nuances and the emotions of others; you have good insight into what makes people “tick”; you seem to know what to say and do in any social situation.

Spirituality: You hold a set of beliefs, whether religious or not, about how your life is part of something bigger and more meaningful; those beliefs shape your behavior and provide a sense of comfort, understanding, and purpose.

Teamwork: You are a collaborative and participative member on groups and teams; you are loyal to your group; you feel a strong sense of duty to your group; you always do your share.

Zest: You are enthusiastic toward life; you are highly energetic and activated; you use your energy to the fullest degree.

Table 3

Item Distribution.

Strength	Initial Set					Final Set				
	#	Original	Revised	New	Rev.	#	Original	Revised	New	Rev.
Beauty	17	8	4	5	5	8	6	0	2	2
Bravery	19	6	7	6	5	8	4	3	1	4
Creativity	17	6	8	3	4	8	5	3	0	3
Curiosity	17	7	5	5	5	8	5	1	2	3
Fairness	16	5	7	4	6	8	3	3	2	3
Forgiveness	17	7	9	1	6	8	4	4	0	4
Gratitude	17	6	4	7	5	8	4	1	3	4
Honesty	17	6	4	7	4	8	3	3	2	4
Hope	22	8	10	4	7	8	4	3	1	4
Humor	17	6	7	4	5	8	5	3	0	3
Judgment	18	7	4	7	4	8	4	2	2	3
Kindness	15	6	5	4	5	8	4	3	1	3
Leadership	22	6	4	12	5	8	2	2	4	4
Learning	16	8	3	5	4	8	4	3	1	3
Love	15	5	2	8	5	8	2	2	4	4
Modesty/Humility	17	8	5	4	6	8	4	3	1	4
Perseverance	20	8	8	4	6	8	4	4	0	4
Perspective	17	5	2	10	5	8	3	0	5	3
Prudence	19	6	3	10	5	8	4	3	1	3
Self-Regulation	19	5	2	12	5	8	2	0	6	4
Social Intelligence	20	7	2	11	4	8	4	2	2	4
Spirituality	19	6	8	5	4	8	4	4	0	4
Teamwork	17	8	6	3	4	8	4	3	1	1
Zest	19	7	5	7	5	8	3	2	3	3

Note. # = number of items in the set; Original = number of items from the VIA-IS; Revised = number of items based on VIA-IS items; New = number of items created by reviewers; Rev. = number of reversed items.

Table 4

Global Assessment of Character Strengths 72-Item Version Statistics.

Strength	<i>M</i>	<i>SD</i>	Skew	Kurtosis
Beauty	5.42	1.21	-0.72	0.56
Bravery	4.70	1.23	-0.26	-0.02
Creativity	5.11	1.31	-0.53	-0.02
Curiosity	5.47	1.13	-0.73	0.75
Fairness	5.31	1.02	-0.53	0.97
Forgiveness	4.73	1.19	-0.33	0.18
Gratitude	5.34	1.17	-0.56	0.43
Honesty	5.49	1.07	-0.69	0.98
Hope	5.18	1.24	-0.57	0.31
Humor	5.41	1.22	-0.73	0.53
Judgment	5.17	1.15	-0.57	0.41
Kindness	5.65	1.07	-0.88	1.40
Leadership	4.74	1.35	-0.44	-0.06
Learning	5.75	1.11	-0.97	1.30
Love	5.29	1.26	-0.61	0.21
Modesty/Humility	4.73	1.12	-0.27	0.35
Perseverance	4.84	1.22	-0.31	-0.01
Perspective	5.30	1.05	-0.52	0.70
Prudence	4.42	1.07	-0.13	0.39
Self-Regulation	4.34	1.22	-0.22	-0.04
Social Intelligence	5.09	1.28	-0.56	0.11
Spirituality	5.05	1.55	-0.68	-0.09
Teamwork	4.71	1.20	-0.42	0.18
Zest	4.60	1.34	-0.17	-0.27

Note. *N* = 4,286. Scores were generated by averaging across the three items.

Table 5

Justifications for Choices of Signature Strengths.

Justification	<i>N</i>	Justification	<i>N</i>
Improves your life	9	Others mention it	7
This is how I behave	4	How I want to be treated	4
Part of who I am	20	Like it	2
How people should be	5	That way since young	4
Spiritual reasons	5	Priority	3
Strengthens social relationships	13	Essential	10
Helped overcome challenges	13	Constant	3
Always been true	6	Motivating	1
Good at it	6	Had a role model	2
Unique to me	1	Part of growth	1
Trained self	3	How I was raised	3

Note. *N* = 35.

Table 6

Percentage of Strength Endorsement as Signature by the Signature Strengths Survey and VIA Inventory Algorithms.

Strength	SSS ^a	VIA-120 ^b	VIA-IS-R ^b
Beauty	23.34	32.31	39.13
Bravery	16.58	12.65	6.37
Creativity	25.85	26.15	30.75
Curiosity	26.26	21.02	41.97
Fairness	24.23	39.78	24.73
Forgiveness	13.12	18.39	8.38
Gratitude	25.97	25.17	26.20
Honesty	37.01	50.63	32.29
Hope	22.08	10.17	23.50
Humor	29.41	28.42	18.04
Judgment	25.71	42.28	12.27
Kindness	37.71	42.46	32.76
Leadership	14.45	12.53	8.63
Learning	40.67	37.19	58.05
Love	27.52	26.18	31.22
Modesty/Humility	16.78	9.82	14.96
Perseverance	20.26	15.24	12.55
Perspective	25.27	17.38	20.23
Prudence	9.15	11.06	18.25
Self-Regulation	9.13	3.78	4.71
Social Intelligence	24.18	16.17	20.35
Spirituality	33.79	17.27	29.70
Teamwork	11.21	9.57	9.68
Zest	10.46	7.58	5.95

^aN = 4,131

^bN = 4,286

Note. SSS=Signature Strengths Survey (indicating the frequency with which a strength was selected in Round 2); VIA-120=short form of the original inventory; VIA-IS-R=revised VIA-IS 8-item scales.

Table 7

Correlations between VIA-IS-R Scales and Parallel Scales from Other Measures.

	VIA-120	VIA-IS-M	VIA-IS-P	GACS-72	GACS-24	SSS
Beauty	.93	.95	.95	.75	.71	.52
Bravery	.87	.93	.91	.61	.61	.46
Creativity	.94	.96	.95	.67	.65	.53
Curiosity	.88	.92	.92	.51	.49	.32
Fairness	.80	.93	.91	.45	.46	.31
Forgiveness	.84	.94	.90	.61	.60	.41
Gratitude	.90	.94	.92	.70	.68	.55
Honesty	.76	.89	.87	.56	.55	.45
Hope	.89	.95	.94	.64	.67	.44
Humor	.89	.96	.93	.71	.71	.56
Judgment	.71	.92	.86	.48	.43	.41
Kindness	.82	.91	.93	.52	.50	.44
Leadership	.59	.95	.93	.71	.70	.51
Learning	.64	.91	.95	.67	.62	.52
Love	.78	.97	.94	.70	.72	.48
Modesty/Humility	.79	.94	.83	.48	.50	.37
Perseverance	.90	.96	.93	.57	.59	.44
Perspective	.87	.92	.90	.60	.58	.44
Prudence	.91	.95	.93	.50	.50	.30
Self-Regulation	.80	.96	.95	.61	.63	.38
Social Intelligence	.85	.93	.90	.63	.62	.46
Spirituality	.92	.95	.95	.79	.75	.64
Teamwork	.78	.95	.93	.69	.63	.46
Zest	.92	.95	.95	.66	.66	.45
<i>M</i>	.83	.94	.92	.62	.61	.45

Note. $N = 4,286$ for all columns except the last, where $N = 4,131$. VIA-IS-R=revised VIA-IS 8-item scales; VIA-120=short form of the original inventory; VIA-IS-M= revised VIA-IS 4-item scales with mixed positive and negative keying; VIA-IS-P= revised VIA-IS 4-item scales with only positive keying; GACS-72=Global Assessment of Character Strengths 3-item scales; GACS-24=GACS 1-item scales; SSS=Signature Strengths Survey (0-2 score indicating the frequency with which a strength was selected in Rounds 1 and 2).

Table 8
Reliability Statistics for Multi-Item Scales.

Strength/Virtue	VIA-IS	VIA-120	VIA-IS-R	VIA-IS-M	VIA-IS-P	GACS-72	GACS-24
Beauty	.86	.85	.89	.82	.83	.90	.83
Bravery	.83	.80	.83	.74	.72	.82	.72
Creativity	.89	.88	.90	.85	.83	.86	.74
Curiosity	.82	.79	.85	.78	.74	.85	.80
Fairness	.81	.74	.83	.71	.77	.83	.79
Forgiveness	.88	.78	.83	.74	.71	.85	.70
Gratitude	.85	.87	.85	.75	.82	.87	.76
Honesty	.77	.70	.79	.78	.67	.81	.79
Hope	.84	.79	.88	.79	.78	.88	.77
Humor	.86	.86	.86	.74	.85	.89	.85
Judgment	.82	.75	.77	.62	.65	.83	.78
Kindness	.80	.75	.82	.74	.73	.84	.80
Leadership	.80	.67	.86	.71	.81	.88	.84
Learning	.85	.76	.86	.83	.78	.86	.78
Love	.79	.77	.91	.85	.87	.86	.78
Modesty/Humility	.81	.76	.83	.69	.68	.84	.71
Perseverance	.88	.87	.90	.80	.83	.81	.78
Perspective	.81	.77	.81	.74	.79	.83	.74
Prudence	.79	.78	.86	.72	.79	.83	.76
Self-Regulation	.75	.76	.89	.78	.79	.81	.72
Social Int	.79	.76	.83	.76	.72	.87	.84
Spirituality	.90	.90	.89	.84	.83	.93	.83
Teamwork	.78	.71	.85	.77	.69	.87	.81
Zest	.84	.82	.89	.84	.83	.88	.84
<i>M</i>	.83	.79	.85	.77	.77	.85	.78
Six Virtues							
Wisdom			.81	.72	.78		
Courage			.80	.71	.77		
Humanity			.82	.62	.76		
Justice			.79	.68	.71		
Temperance			.76	.68	.62		
Transcendence			.83	.83	.79		
<i>M</i>			.80	.71	.74		
Three Virtues							
Caring			.75	.78	.69		
Inquisitiveness			.85	.79	.80		
Self-Control			.87	.75	.75		
<i>M</i>			.82	.78	.75		

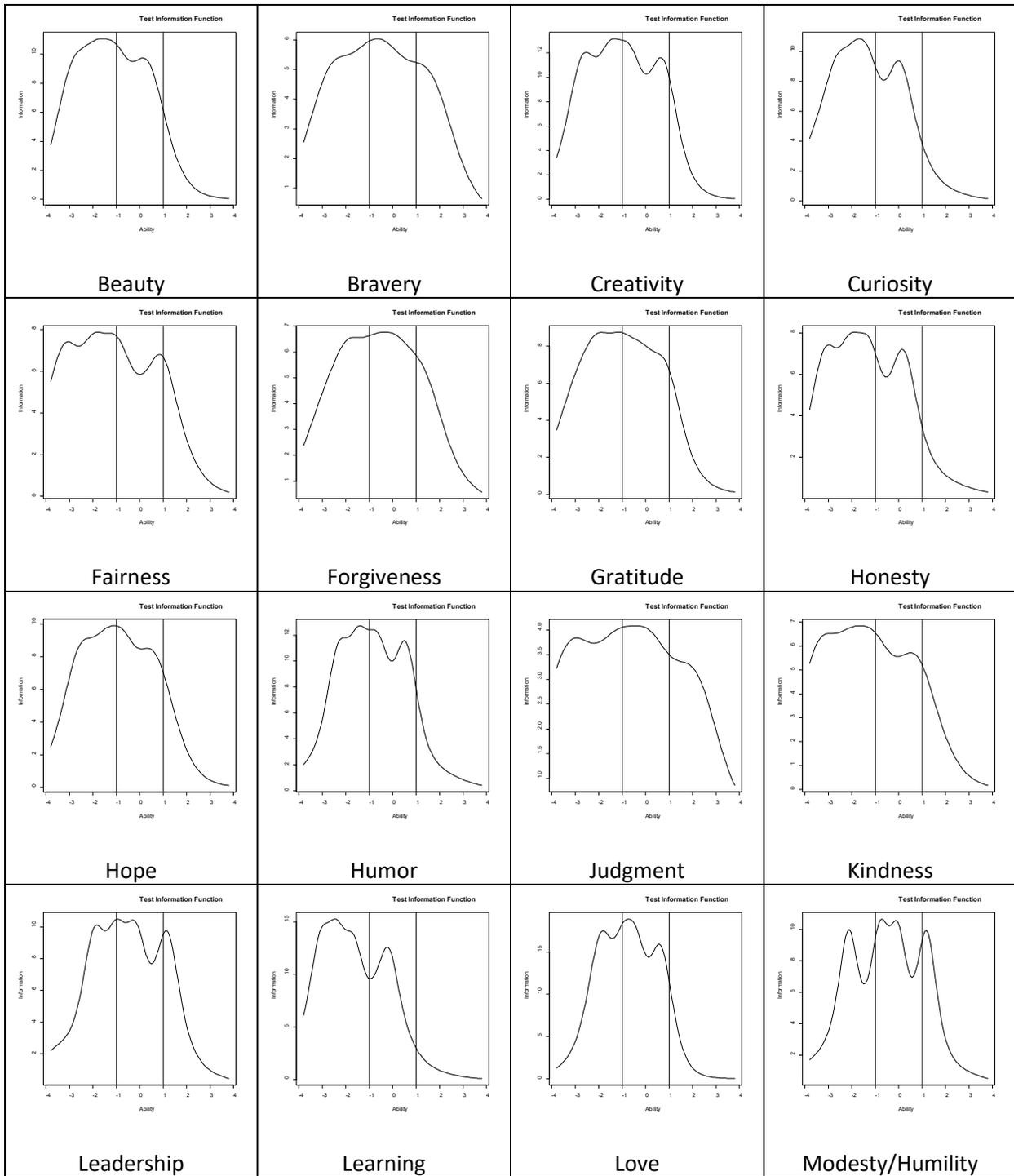
Note. VIA-IS=VIA Inventory of Strengths (240 items); VIA-120=short form of the original inventory; VIA-IS-R=revised VIA-IS 8-item scales; VIA-IS-M=revised VIA-IS 4-item scales, positive and negative keying;

VIA-IS-P=revised VIA-IS 4-item scales, positive keying; GACS-72=Global Assessment of Character Strengths, 3-item scales; GACS-24=GACS 1-item scales. Virtue scales in the VIA-IS-R column are based on items included in the separate virtue scales. *N* = 4,286 except for the VIA-IS, where *N* = 458,854.

Table 9
Correlations with Criteria.

Strength	VIA-IS-R	VIA-120	VIA-IS-M	VIA-IS-P	GACS-72	GACS-24	SSS
Beauty	.69	.64	.65	.66	.61	.59	.45
Bravery	.46	.45	.41	.46	.30	.29	.22
Creativity	.69	.65	.66	.67	.52	.52	.43
Curiosity	.47	.40	.51	.44	.43	.40	.27
Fairness	.38	.35	.34	.37	.28	.26	.18
Forgiveness	.44	.39	.40	.44	.41	.36	.32
Gratitude	.74	.72	.69	.74	.64	.59	.52
Honesty	.39	.29	.30	.36	.37	.34	.30
Hope	.75	.69	.72	.69	.58	.57	.40
Humor	.63	.65	.58	.65	.63	.62	.51
Judgment	.46	.39	.39	.42	.34	.31	.28
Kindness	.47	.43	.42	.46	.38	.36	.32
Leadership	.65	.37	.60	.64	.58	.56	.42
Learning	.57	.49	.53	.58	.51	.47	.44
Love	.59	.54	.55	.59	.56	.52	.35
Modesty/Humility	.27	.27	.29	.29	.27	.25	.19
Perseverance	.49	.48	.45	.43	.44	.41	.34
Perspective	.64	.58	.60	.58	.49	.47	.40
Prudence	.39	.37	.36	.38	.28	.25	.16
Self-Regulation	.44	.32	.44	.41	.33	.31	.22
Social Intelligence	.62	.53	.61	.57	.47	.45	.37
Spirituality	.63	.54	.52	.63	.51	.50	.42
Teamwork	.45	.41	.44	.43	.44	.40	.29
Zest	.79	.75	.79	.76	.55	.54	.38
<i>M</i>	.55	.49	.51	.53	.45	.43	.34

Note. *N* = 4,286 for all columns except the last, where *N* = 4,131. VIA-IS-R=revised VIA-IS 8-item scales; VIA-120=short form of the original inventory; VIA-IS-M= revised VIA-IS 4-item scales with mixed positive and negative keying; VIA-IS-P= revised VIA-IS 4-item scales with only positive keying; GACS-72=Global Assessment of Character Strengths 3-item scales; GACS-24=GACS 1-item scales; SSS=Signature Strengths Survey (0-2 score indicating the frequency with which a strength was selected in Rounds 1 and 2).



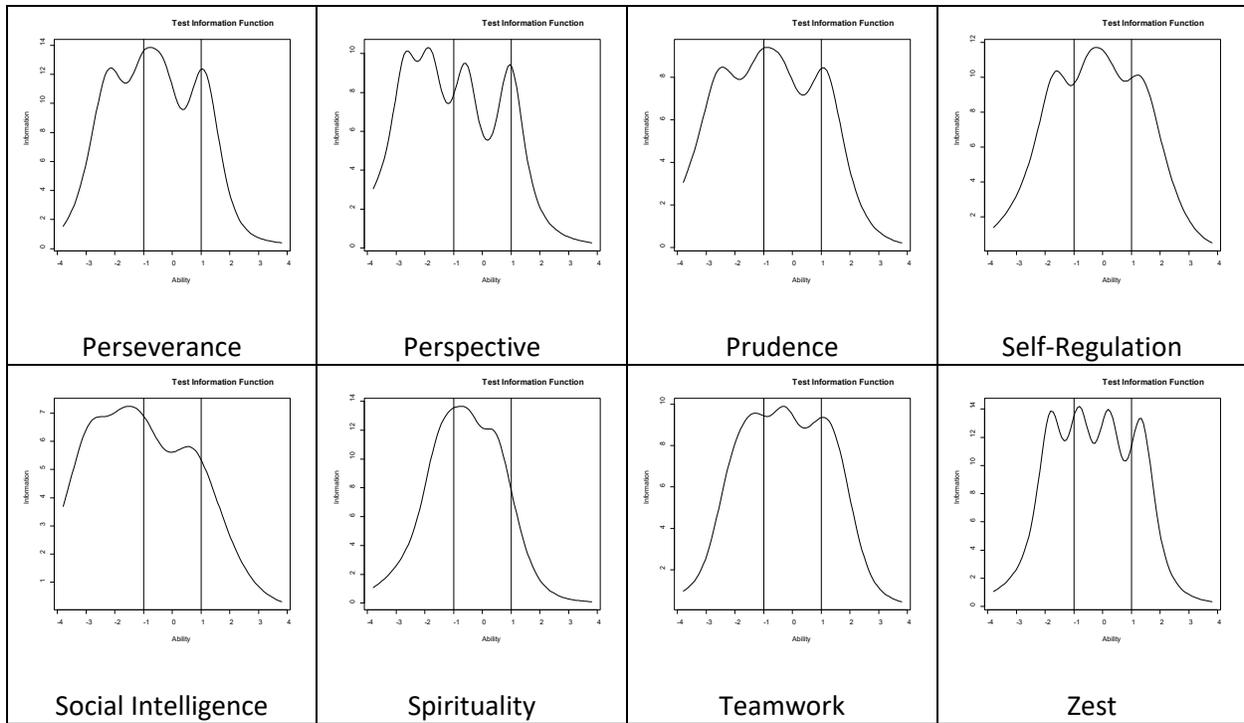


Figure 1. Test information curves for VIA-IS-R scales.

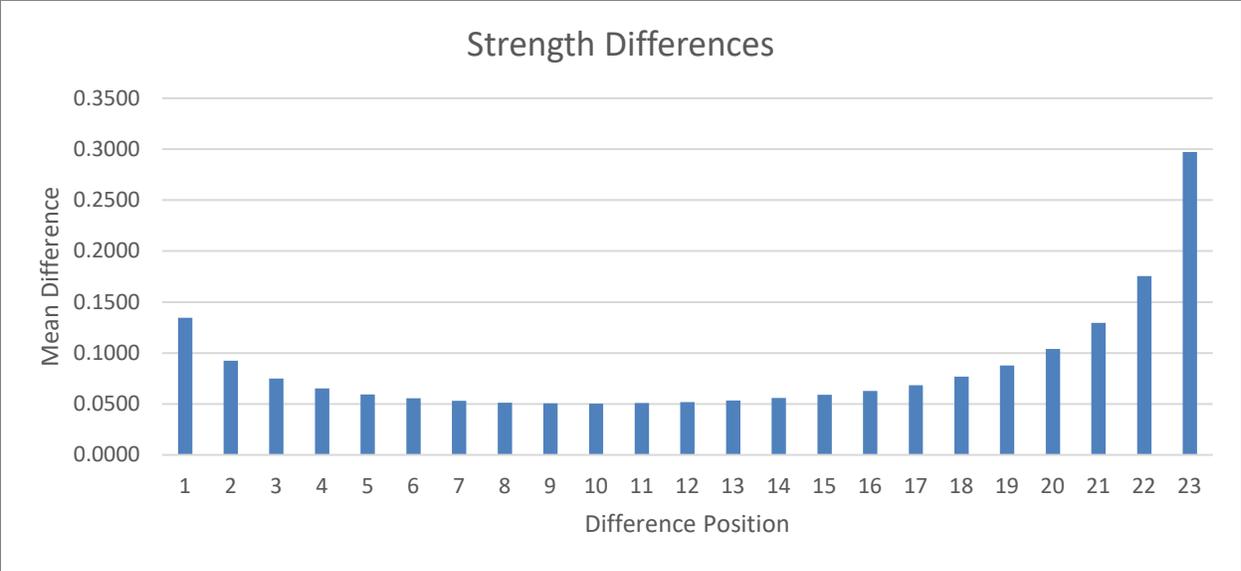


Figure 2. Mean differences between strengths by rank. Values represent the mean difference between the first two highest strengths, then the second and third highest, and so on.

Appendix A
Global Assessment of Character Strengths

Global Assessment of Character Strengths

Instructions: This survey asks you to describe aspects of your personality. The first page describes 24 elements of personality. On the other pages, you will be asked questions about each of those elements. Be as honest as you can.

1. Creativity: You are viewed as a creative person; you see, do, and/or create things that are of use; you think of unique ways to solve problems and be productive.
2. Curiosity: You are an explorer; you seek novelty; you are interested in new activities, ideas, and people; you are open to new experiences.
3. Judgment/Critical Thinking: You are analytical; you examine things from all sides; you do not jump to conclusions, but instead attempt to weigh all the evidence when making decisions.
4. Love of Learning: You often find ways to deepen your knowledge and experiences; you regularly look for new opportunities to learn; you are passionate about building knowledge.
5. Perspective/Wisdom: You take the “big picture” view of things; others turn to you for wise advice; you help others make sense of the world; you learn from your mistakes.
6. Bravery/Courage: You face your fears and overcome challenges and adversity; you stand up for what is right; you do not shrink in the face of pain or inner tension or turmoil.
7. Perseverance: You keep going and going when you have a goal in mind; you attempt to overcome all obstacles; you finish what you start.
8. Honesty: You are a person of high integrity and authenticity; you tell the truth, even when it hurts; you present yourself to others in a sincere way; you take responsibility for your actions.
9. Zest: You are enthusiastic toward life; you are highly energetic and activated; you use your energy to the fullest degree.
10. Love: You are warm and genuine to others; you not only share but are open to receiving love from others; you value growing close and intimate with others.
11. Kindness: You do good things for people; you help and care for others; you are generous and giving; you are compassionate.
12. Social Intelligence: You pay close attention to social nuances and the emotions of others; you have good insight into what makes people “tick”; you seem to know what to say and do in any social situation.
13. Teamwork: You are a collaborative and participative member on groups and teams; you are loyal to your group; you feel a strong sense of duty to your group; you always do your share.
14. Fairness: You believe strongly in an equal and just opportunity for all; you don’t let personal feelings bias your decisions about others; you treat people the way you want to be treated.
15. Leadership: You positively influence those you lead; you prefer to lead than to follow; you are very good at organizing and taking charge for the collective benefit of the group.
16. Forgiveness/Mercy: You readily let go of hurt after you are wronged; you give people a second chance; you are not vengeful or resentful; you accept people’s shortcomings.
17. Humility/Modesty: You let your accomplishments speak for themselves; you see your own goodness but prefer to focus the attention on others; you do not see yourself as more special than others; you admit your imperfections.
18. Prudence: You are wisely cautious; you are playful and conscientious; you are careful to not take undue risks or do things you might later regret.
19. Self-Regulation: You are a very disciplined person; you manage your vices and bad habits; you stay calm and cool under pressure; you manage your impulses and emotions.
20. Appreciation of Beauty & Excellence: You notice the beauty and excellence around you; you are often awe-struck by beauty, greatness, and/or the moral goodness you witness; you are often filled with wonder.
21. Gratitude: You regularly experience and express thankfulness; you don’t take the good things that happen in your life for granted; you tend to feel blessed in many circumstances.
22. Hope: You are optimistic, expecting the best to happen; you believe in and work toward a positive future; you can think of many pathways to reach your goals.
23. Humor: You are playful; you love to make people smile and laugh; your sense of humor helps you connect closely to others; you brighten gloomy situations with fun and/or jokes.
24. Spirituality: You hold a set of beliefs, whether religious or not, about how your life is part of something bigger and more meaningful; those beliefs shape your behavior and provide a sense of comfort, understanding, and purpose.

Instructions: Put an X in the box in each row that best describes you.

	Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
Creativity is an essential part of who I am in this world.							
Curiosity is an essential part of who I am in this world.							
Judgment/Critical Thinking is an essential part of who I am in this world.							
Love of Learning is an essential part of who I am in this world.							
Perspective/Wisdom is an essential part of who I am in this world.							
Bravery/Courage is an essential part of who I am in this world.							
Perseverance is an essential part of who I am in this world.							
Honesty is an essential part of who I am in this world.							
Zest is an essential part of who I am in this world.							
Love is an essential part of who I am in this world.							
Kindness is an essential part of who I am in this world.							
Social Intelligence is an essential part of who I am in this world.							
Teamwork is an essential part of who I am in this world.							
Fairness is an essential part of who I am in this world.							
Leadership is an essential part of who I am in this world.							
Forgiveness/Mercy is an essential part of who I am in this world.							
Humility/Modesty is an essential part of who I am in this world.							
Prudence is an essential part of who I am in this world.							
Self-Regulation is an essential part of who I am in this world.							
Appreciation of Beauty & Excellence is an essential part of who I am in this world.							
Gratitude is an essential part of who I am in this world.							
Hope is an essential part of who I am in this world.							
Humor is an essential part of who I am in this world.							
My Spirituality is an essential part of who I am in this world.							

Instructions: Put an X in the box in each row that best describes you.

	Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
It is natural and effortless for me to express my Creativity strength.							
It is natural and effortless for me to express my Curiosity strength.							
It is natural and effortless for me to express my Judgment/Critical Thinking strength.							
It is natural and effortless for me to express my Love of Learning strength.							
It is natural and effortless for me to express my Perspective/Wisdom strength.							
It is natural and effortless for me to express my Bravery/Courage strength.							
It is natural and effortless for me to express my Perseverance strength.							
It is natural and effortless for me to express my Honesty strength.							
It is natural and effortless for me to express my Zest strength.							
It is natural and effortless for me to express my Love strength.							
It is natural and effortless for me to express my Kindness strength.							
It is natural and effortless for me to express my Social Intelligence strength.							
It is natural and effortless for me to express my Teamwork strength.							
It is natural and effortless for me to express my Fairness strength.							
It is natural and effortless for me to express my Leadership strength.							
It is natural and effortless for me to express my Forgiveness/Mercy strength.							
It is natural and effortless for me to express my Humility/Modesty strength.							
It is natural and effortless for me to express my Prudence strength.							
It is natural and effortless for me to express my Self-Regulation strength.							
It is natural and effortless for me to express my Appreciation of Beauty & Excellence strength.							
It is natural and effortless for me to express my Gratitude strength.							
It is natural and effortless for me to express my Hope strength.							
It is natural and effortless for me to express my Humor strength.							

It is natural and effortless for me to express
my Spirituality.

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Instructions: Put an X in the box in each row that best describes you.

	Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
It is uplifting or energizing for me to express my Creativity strength.							
It is uplifting or energizing for me to express my Curiosity strength.							
It is uplifting or energizing for me to express my Judgment/Critical Thinking strength.							
It is uplifting or energizing for me to express my Love of Learning strength.							
It is uplifting or energizing for me to express my Perspective/Wisdom strength.							
It is uplifting or energizing for me to express my Bravery/Courage strength.							
It is uplifting or energizing for me to express my Perseverance strength.							
It is uplifting or energizing for me to express my Honesty strength.							
It is uplifting or energizing for me to express my Zest strength.							
It is uplifting or energizing for me to express my Love strength.							
It is uplifting or energizing for me to express my Kindness strength.							
It is uplifting or energizing for me to express my Social Intelligence strength.							
It is uplifting or energizing for me to express my Teamwork strength.							
It is uplifting or energizing for me to express my Fairness strength.							
It is uplifting or energizing for me to express my Leadership strength.							
It is uplifting or energizing for me to express my Forgiveness/Mercy strength.							
It is uplifting or energizing for me to express my Humility/Modesty strength.							
It is uplifting or energizing for me to express my Prudence strength.							
It is uplifting or energizing for me to express my Self-Regulation strength.							
It is uplifting or energizing for me to express my Appreciation of Beauty & Excellence strength.							
It is uplifting or energizing for me to express my Gratitude strength.							
It is uplifting or energizing for me to express my Hope strength.							
It is uplifting or energizing for me to express my Humor strength.							

It is uplifting or energizing for me to express my Spirituality.

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Appendix B
Signature Strengths Survey

The Signature Strengths Survey

Instructions

Read the following descriptions of 24 character strengths. Everyone uses these strengths at times. What we would like you to do is to put a check in the box next those strengths that are *absolutely essential* to you, that define *who you are as a person*, that are *part of who you are*. For example, someone who has devoted their life to helping others might choose Kindness as one of his essential strengths, someone who prides herself on being able to figure out other people might consider Social Intelligence key to who she is, and someone who is constantly seeking out new information might consider Love of Learning to be essential. Most people check just a few essential strengths.

There are some people who believe none of these characteristics is more essential to who they are than any of the others. If so, don't check any of the strengths. In the last row, check *None of these characteristics is more essential to who I am than any of the others*.

Please describe *the person you are*, NOT the person you wish you could be. Also, think about your life *in general*, not how you behaved in 1-2 situations.

Essential Strength?	Character Strengths
	1. Creativity: You are viewed as a creative person; you see, do, and/or create things that are of use; you think of unique ways to solve problems and be productive.
	2. Curiosity: You are an explorer; you seek novelty; you are interested in new activities, ideas, and people; you are open to new experiences.
	3. Judgment/Critical Thinking: You are analytical; you examine things from all sides; you do not jump to conclusions, but instead attempt to weigh all the evidence when making decisions.
	4. Love of Learning: You often find ways to deepen your knowledge and experiences; you regularly look for new opportunities to learn; you are passionate about building knowledge.
	5. Perspective/Wisdom: You take the “big picture” view of things; others turn to you for wise advice; you help others make sense of the world; you learn from your mistakes.
	6. Bravery/Courage: You face your fears and overcome challenges and adversity; you stand up for what is right; you do not shrink in the face of pain or inner tension or turmoil.
	7. Perseverance: You keep going and going when you have a goal in mind; you attempt to overcome all obstacles; you finish what you start.
	8. Honesty: You are a person of high integrity and authenticity; you tell the truth, even when it hurts; you present yourself to others in a sincere way; you take responsibility for your actions.
	9. Zest: You are enthusiastic toward life; you are highly energetic and activated; you use your energy to the fullest degree.
	10. Love: You are warm and genuine to others; you not only share but are open to receiving love from others; you value growing close and intimate with others.
	11. Kindness: You do good things for people; you help and care for others; you are generous and giving; you are compassionate.

Essential Strength?	Character Strengths
	12. Social Intelligence: You pay close attention to social nuances and the emotions of others; you have good insight into what makes people “tick”; you seem to know what to say and do in any social situation.
	13. Teamwork: You are a collaborative and participative member on groups and teams; you are loyal to your group; you feel a strong sense of duty to your group; you always do your share.
	14. Fairness: You believe strongly in an equal and just opportunity for all; you don’t let personal feelings bias your decisions about others; you treat people the way you want to be treated.
	15. Leadership: You positively influence those you lead; you prefer to lead than to follow; you are very good at organizing and taking charge for the collective benefit of the group.
	16. Forgiveness/Mercy: You readily let go of hurt after you are wronged; you give people a second chance; you are not vengeful or resentful; you accept people’s shortcomings.
	17. Humility/Modesty: You let your accomplishments speak for themselves; you see your own goodness but prefer to focus the attention on others; you do not see yourself as more special than others; you admit your imperfections.
	18. Prudence: You are wisely cautious; you are planful and conscientious; you are careful to not take undue risks or do things you might later regret.
	19. Self-Regulation: You are a very disciplined person; you manage your vices and bad habits; you stay calm and cool under pressure; you manage your impulses and emotions.
	20. Appreciation of Beauty & Excellence: You notice the beauty and excellence around you; you are often awe-struck by beauty, greatness, and/or the moral goodness you witness; you are often filled with wonder.
	21. Gratitude: You regularly experience and express thankfulness; you don’t take the good things that happen in your life for granted; you tend to feel blessed in many circumstances.
	22. Hope: You are optimistic, expecting the best to happen; you believe in and work toward a positive future; you can think of many pathways to reach your goals.
	23. Humor: You are playful; you love to make people smile and laugh; your sense of humor helps you connect closely to others; you brighten gloomy situations with fun and/or jokes.
	24. Spirituality: You hold a set of beliefs, whether religious or not, about how your life is part of something bigger and more meaningful; those beliefs shape your behavior and provide a sense of comfort, understanding, and purpose.
	None of these characteristics is more essential to who I am than any of the others. Remember, you should choose this option if the strengths are all equally essential to you, NOT because you think they should be equally essential.

Final Step: Review the strengths you checked. Do any of these strengths stand out as more important to who you are than the others? If so, put a second check in the box next to those strengths.