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# Academic Validation

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## The Heartstyles Indicator – underlying psychological foundation

In this document, we look to explain the underlying psychology behind the Heartstyles Indicator and describe the academic rigour that went into its development and subsequent validation. This should be read in conjunction with our printed brochure, The Heartstyles Indicator.

### Creation of the Heartstyles Four Underlying Principles and 16 Constructs

- Online, easy to complete, 10–15 minutes completion time
- Various versions of the product are available:
    - **MyPack (Self Score only):** Individuals complete an Ideal (Benchmark) version of their own behaviour – to target and aspire to and a self-assessment (Self Score)
    - **3/6/9/15 Pack versions (360° version):** Individuals complete an Ideal (Benchmark) + self-assessment (Self Score) + 360° assessment (Others Score) with opportunity for 3, 6, 9 or 15 respondents
- Available online in 25 languages
- Quantifies not only individual behaviour but also team, and overall operating culture behaviour - defined as the collective behaviours of individuals Verified criterion, construct, and content-related validity
- Proven reliability through Cronbach coefficient alphas and test-retest correlations
- Normed on highly diversified sample of over 3,000 individuals
- 1994 – 2006: Model, constructs and item generation
- 2006 – 20011: four rounds of validation studies
- 2012: First norming of Indicator

- 2013 – ongoing: Gender and age research for differential norms (cultural, age, gender)
- 2017 – dynamic norm capability created and new norm sets created based on **21,637 Self** and **82,786 Others**
- Dynamic norm capability means there are continuously growing norm pools available for research studies into age, gender, cultural/country correlation data

### Heartstyles Indicator - history

Awareness of oneself and others, and understanding one's motivations and how they manifest in one's behaviour are essential to the Heartstyles model.

The Heartstyles Indicator questionnaire is designed to assess behavioural dispositions that influence the quality of peoples' inter-personal human relationships and task effectiveness. The Heartstyles model was developed based on extensive research, comprehensive reviews of psychological theories, alignment with spiritual principles, related research studies, and research on currently available measurement tools as well as qualitative construct validation from targeted sample populations in Australia, UK, South Africa and USA.

The Indicator was developed by Stephen Klemich and Dr Mara Klemich (PhD). Mara's background as a Neuropsychologist, Clinical Psychologist, and later Organisational Psychologist assisted the research process in its first phases of model and construct and

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item generation. Stephen's extensive consulting background in leadership and culture development, and personal development programs and initiatives assisted with the behavioural observations which formed the basis of the model, construct development and item generation.

The Heartstyles Indicator is a 75 item web-based questionnaire. It is based on four universal principles of life, which research has shown are common to all cultures. These four principles are Humility, Love, Pride and Fear. The model consists of two behavioural domains (effective vs. ineffective) with sixteen constructs (eight in each domain) consisting of four quadrants.

Between 1994 – 2006 the researchers further developed the initial 16 constructs with an exhaustive list of items (approximately 650). The items were derived from phase one –extensive literature reviews, extensive theorist reviews, reviews of current instruments, and behavioural observations by the researchers of peoples' behaviour as related to a motivation of Humility, Love, Pride or Fear were documented and item generation derived from the behaviours.

The second phase of the research, comprised further exhaustive item generation, through to the validation studies, and finally norming of the instrument was a lengthy and rigorous process, lasting from 2007 to 2012. Studying known behavioural traits and then factor-analyzing hundreds of measures of these traits (in self-report and questionnaire data, peer ratings) in order to find the underlying factors eventuated in the final 16 constructs that make up the Heartstyles Indicator as it is today.

## Psychological Theories - research and review

Initial research focused on the early psychoanalytic theories based on a focus of personality. Later behaviourists moved the focus to external stimulus. The first phase of research involved extensive literature reviews of psychological theories resulted in adopting or adapting concepts from such theorists and researchers as Maslow (1954), Sullivan (1953), Horney (1937), McClelland (1953; 1961; 1987), Leary (1957), Rogers (1941; 1951; 1961), and Lafferty (1989), Seligman (1998), Bandura (1977), Goleman (1995). Rogers' works (1942; 1951; 1961) around

humanism and his person-centered approach were also researched as part of the Heartstyles model development.

Authenticity with oneself and others, and understanding one's motivations and how they manifest in one's behaviour are essential to the Heartstyles model. McClelland's works (1953; 1961; 1987) contributed to several aspects of philosophical grounding of the Heartstyles model. Specifically, McClelland's works link certain ways of thinking to effectiveness, and the concept of achievement. The notions of achievement and desire to develop are key constructs of effective behaviours in the Heartstyles model.

Abraham Maslow's (1954) work on Self Actualizing, where human nature is viewed as basically good, not evil was reviewed. Normal human development involves the actualization of this inherent "goodness", whereas, psychopathology results from the frustration of a human being's essential nature. Stack Sullivan's work (1953) around two sources of motivation, the pursuit of satisfaction and the pursuit of security, was also reviewed in relation to the notions of effective (constructive) and ineffective (defensive) interpersonal behaviours. Sullivan posited that the main motive force of personality is the avoidance of anxiety. Further, his notion of the Self System, synthesizing the task/people orientations with the satisfaction/security needs, was also useful in the research review. Sullivan suggested that personality traits developed in childhood and reinforced by positive affirmation and security protection strategies to avoid anxiety and threats to self-esteem could be termed 'defence mechanisms' - the use of evasive manoeuvres: avoiding and opposing. These concepts were also aligned to the researchers' position of fundamental motivators/spiritual principles of Pride and Fear being key to peoples' ineffective behaviours.

Regarding the work on security versus insecurity, the Heartstyles team recognised that the use of Satisfaction versus Security needs could be attributed to a deep set of motivators based on the heart level (spiritual) values of Humility and Love and Pride and Fear. The Heartstyles team hypothesized that the use of Defensive and Positive constructs would be useful for individuals to continue to develop effective

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behaviours that promote effective character growth and interpersonal relationships.

Along similar lines to Sullivan, Horney (1937) developed her 'Theory of the Self'. The Heartstyles researchers focused on the Compliance, Aggression, Detachment distinctions. Other works researched included: Seligman's 'Learned Optimism'; Bandura's 'Self efficacy'; Goleman's 'Emotional Intelligence' (note: Goleman was a student of McClelland). Leary (1957) through his Interpersonal Circumplex model introduced the notion of positioning and relating thinking styles through this model. He asserted that normal and abnormal personalities of the same type are functionally linked along a continuum, and personality styles are systematically related to one another in a circular order – an important idea for Heartstyles.

In investigating the concepts of Humility, Love, Pride and Fear and the ability to measure these, the Emotional Intelligence and positive psychology research was investigated. Emotional Intelligence links strongly with concepts of love and spirituality: bringing compassion and humanity to work. Emotional Intelligence (Goleman, 1995) is defined as being concerned with effectively understanding oneself and others, relating well to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands. Differences in these mental preferences lead to different value structures and communication styles, which can hamper mutual understanding and cooperation.

The concepts of the positive psychology research which catalyzed the study of human flourishing, strengths, and virtues (Seligman, 1975), were also investigated. In particular constructs related to low humility — such as narcissism and self-enhancement, and depression and low self-esteem— being some of the most robust in social psychology (Seligman, 1991) were investigated. At the heart of positive psychology is the idea that positive traits can be measured and taught, just as negative characteristics can be identified and discouraged (Lopez-Cepero Borrego et al, 2009).

The authors defined humility using two main characteristics: on the intrapersonal level, humility involves an accurate view of the self; on the interpersonal level, humility involves a focus that is other-oriented rather than self-focused. Humility is constituted by an openness to new ideas, receptivity to new sources of evidence and the implications of that evidence, and willingness to revise personal beliefs in the face of compelling reasons. Further, humility is theorized to mitigate communication and relationship breakdowns caused by humility's conceptual foils - traits related to Pride (narcissism) and Fear (low self-esteem) that promote aggressive competition or passive avoidance and withdrawal.

Having humility means one has an accepting self-concept that is not hypersensitive to ego threats (Peterson & Seligman, 2004; Tangney, 2000). Humble people can perceive themselves and others clearly, without the need to exaggerate information in either a self-promoting (Pride- *authors own*) or self-debasing/protecting (Fear – *authors own*) direction (Peterson & Seligman, 2004; Tangney, 2000). In contrast, narcissists tend to make gross, positive distortions, inflating their accomplishments, overlooking flaws, and blaming others for failures, whereas low self-esteem individuals can overemphasize negative information or manufacture it from ambiguous data. Sizable bodies of literature on self-esteem, narcissism, and other self-relevant constructs support the proposition that individuals with stable identities flourish, whilst low self-esteem tends to be undesirable and maladaptive (see DuBois & Tevendale, 1999 for a review). Individuals with low self-esteem show stronger negative reactions to failure than do high self-esteem individuals (Brown & Dutton, 1995).

The humble are teachable (Peterson & Seligman, 2004; Tangney, 2000), and they seek the truth, even when it may be personally embarrassing or unflattering. Narcissists have difficulty learning from others whom they judge as less intelligent than themselves, do not readily acknowledge being in a state of ignorance (Beck, Freeman, & Davis, 2006) or may simply be uninterested in any activity that does not offer opportunities to impress others (Wallace & Baumeister, 2002). Low self-esteem individuals ruminate on their failures and mistakes and see themselves as inferior (Nolen-Hoeksema et al., 2008; Pyszczynski & Greenberg, 1987). Neither of these are effective in relationships.

Further, humility is related to a number of positive social outcomes, which relate to empathy or

sympathy (Peterson & Seligman, 2004; Tangney, 2000) – hypothesises by the authors as pertaining to the concept of Love (for others). By contrast, excessive self-focus is a hallmark of mental distress and disorder (Ingram, 1990; Musson & Alloy, 1988; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008) whether that be narcissistic (Pride) or low self-esteem (Fear). Rumination about the self, has been shown to be maladaptive and to impair interpersonal problem solving and social relationships (e.g., Lyubomirsky & Tkach, 2004; Nolen-Hoeksema et al., 2008), as well as perspective taking (Joireman, Parrott, & Hammersla, 2002). Likewise, the ability to focus on others and forget oneself differentiates the humble from the narcissistic. Narcissists have difficulties with aspects of maintaining healthy relationships and exhibit less empathy, caring, and commitment (Campbell, 1999; Campbell, Foster, & Finkel, 2002; Watson, Grisham, Trotter, & Biderman, 1984; Watson & Morris, 1991). All the above research formed the basis for the establishment of the Heartstyles Indicator model of the four central principles: Humility, Love, Pride and Fear.

Research then focused on defining behaviours for each principle. An extensive literature review of psychological theories resulted in adopting or adapting concepts from Horney (1937), Lafferty (1989), Leary (1957), Maslow (1954), McClelland (1953; 1961; 1987), Rogers (1951; 1961) and Sullivan (1953). In addition, existing personality measurement instruments that were referred to in developmental research for the Heartstyles model, include: California Psychological Inventory (CPI) (McCrae, Costa, Piedmont, & Folk, 1993; McAllister, 1996; Megargee, 1972), NEO PI-R (Costa & McCrae, 1992), the 16 PF (Cattell, 1989; Cattell & Schuerger, 2003), LSI Life Styles Inventory (Lafferty, 1989), Occupational Personality Questionnaire (OPQ) (Saville, Holdsworth, Nyfield, Cramp & Mabey, 1984), and Myers-Briggs Type Indicator (MBTI) (Myers, 1980; Myers & McCaulley, 1989).

With this background, The Heartstyles model was developed and consists of two behavioural domains (effective vs. ineffective) with sixteen constructs (eight in each domain) consisting four quadrants. The effective behavioural domain consists of two quadrants of *Personal Growth* and *Growing Others*. The *Personal Growth* quadrant is about taking

responsibility for achieving one's personal best at the highest level and being teachable. It is underpinned with a spirit of humility and love. It may be reasonably argued that people feel safe around people who live these behaviours, and thus are prepared to freely contribute as a result of not being afraid. The quadrant includes four constructs of *Authentic* (behaviour focuses on character development, being real and transparent), *Transforming* (behaviour focuses on personal growth through continual learning and development, *Reliable* (behaviour focuses on honouring others by being dependable and keeping promises), and *Achieving* (behaviour focuses on vision, purpose, and strategy getting things done with excellence not perfection).

The *Growing Others* quadrant describes behaviours that change people's lives when they are prepared to grow and develop others through encouragement and feedback. This quadrant is the essence of the Heartstyles model. The *Growing Others* quadrant includes constructs of *Relating* (behaviour focuses on building and maintaining meaningful relationships with others), *Encouraging* (behaviour focuses on wanting others to grow and succeed by supporting and motivating with praise), *Developing* (behaviour focuses on coaching others towards personal growth through constructive coaching and feedback), and *Compassionate* (behaviour focuses on a genuine desire to understand others, their behaviour and their circumstances).

Ineffective behavioural domain consists of the *Self Promoting* and *Self Protecting* quadrants, which reflects the spiritual value of pride and the spiritual value of fear, respectively. The *Self Promoting* quadrant describes behaviours that are driven by selfish ambition, control and egotistical thinking. The quadrant includes constructs of *Sarcastic* (behaviour that reflects cynicism, negativity and sarcastic humour), *Competitive* (behaviour that reflects competing against and comparing oneself to others), *Controlling* (behaviour that reflects dominating, controlling and having a position of power over others and the environment), and *Striving* (behaviour that reflects the intense need to be in control, look good and get things done through effort and perfectionism).

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The *Self Protecting* quadrant describes a focus on others based on a spirit of fear and describes behaviours that need other's validation for self-worth. These behaviours restrain a person, causing them to be indecisive, reserved and not wanting to stand out. The *Self Protecting* quadrant includes constructs of *Approval-Seeking* (behaviour that reflects the need for others' approval and validation), *Easily Offended* (behaviour that reflects taking others' remarks, comments and feedback too personally), *Dependent* (behaviour that reflects depending on others for direction and decisions), and *Avoiding* (behaviour that reflects avoiding taking responsibility, making decisions, taking risk and dealing with conflict).

## Overview timeline

- **1994**
  Founders Stephen and Mara Klemich were inspired to develop a tool that delivers character development from a focus on people's core principles.

- **1994 – 2006**
  The Model and Indicator designs went into development

- **2007 – 2011**
  The model was refined and the Indicator questions were statistically validated

- **2011 – 2012**
  The tool underwent norming for the corporate sector

- **2012**
  Heartstyles Indicator for the corporate sector was officially academically finished and trademarked

- **2014**
  Improvements were made to the Indicator graphics

- **2016 – 2018**
  The tool was translated into 24 languages construct development

- **2017**
  Dynamic norming was worked into the tool

## Validity and reliability

From its inception as a concept, through to its validation, we've been exhaustive in ensuring the Heartstyles Indicator is robust. Extensive validity and reliability research has been performed by internal and external Ph.D. analysts, including Ph.D. statisticians and industrial organisational psychologists. Heartstyles contracted a team of statisticians led by Prof David Anderson and Dr Namsook Jahng from the University of British Columbia, Vancouver, Canada to conduct the multiple validation studies, and eventually the first norming study on the Heartstyles Indicator.

The original validation studies focused on the following: First, criterion-related validity was verified through predictive performance studies consisting of significance correlations regression analyses along with factor analysis. Second, construct-related validity was shown by way of low construct-irrelevant variance along with intra-measure convergent and discriminant validity. Third, content-related validity evidence was demonstrated through role-based targets and appropriate weightings, ensuring that only the behavioural constructions that are deemed to be important and critical are retained and incorporated. Reliability analyses were also completed that demonstrated internal consistency through Cronbach coefficient alphas along with test-retest correlations.

For each of the scales, it was determined which indicative statements were endorsed and which contraindicative statements were endorsed. These were then used to determine a raw score for each scale, and the raw scores were individually standardised to obtain standard scores. To determine standardisation values, an original normative sample of 3,000 highly diversified individuals was utilised.

The first norming of the validated questionnaire was conducted in 2012 by Prof Anderson and Dr Jahng from the University of British Columbia. The Heartstyles Indicator was developed from proven psychological techniques and measures that have been validated and researched. The methodological thoroughness used in its development makes the Indicator reliable and valid. Central issues underpinning questionnaire development procedures are establishing reliability and validity from item

generation, and the proposal of a priori factor structure to subsequent psychometric analysis. In this regard, the Heartstyles Indicator has been developed through rigorous procedures by adopting logical and structured approaches.

The Indicator is based on item-response theory that derives its initial calculations from an extensive checklist of descriptors. For the user, this procedure is completely nontechnical and does not require any specialised knowledge, with most people taking 10 to 15 minutes to complete the instrument. The Heartstyles Indicator is based on a complex instrument that is able to pinpoint behavioural characteristics. This core instrument is supplemented by easy to read reports developed through years of experience and enhancement. The reports have purposely been written in non-judgemental, easy to understand generic terms, so people of all backgrounds can relate to the information. These reports are proprietary and available exclusively through Heartstyles.

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sample of 3,000 highly diversified individuals was utilized. The first norming of the validated questionnaire was conducted in 2012 by Prof. Anderson and Dr Jahng from the University of British Columbia.

The Heartstyles Indicator is a comprehensive, internally consistent, and valid measure to help people identify and transform their ineffective behaviours as well as to continue to develop effective behaviours that promote effective character growth and improved quality of interpersonal relationships. The Heartstyles Indicator is a tool that has vast application, and can be used with a high level of confidence that it will measure what it claims to measure. It's availability in multiple languages provides global usage and appeal.

## Validation studies

### Phase 1: 2006

- Factor analysis of Heartstyles questionnaire
- Analyse internal consistency and determine factor structure of 650 items to reduce to 360 items
- Determine validity of 16 initial constructs

### Phase 2: 2008 (Stage 1)

- Factor analysis and validation of Heartstyles questionnaire
- Analyse internal consistency and determine factor structure of 360 items. Items reduced to 240
- Determine validity of 16 initial constructs

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cronbach's Alpha | .858 | .867 | .910 | .912 | .897 | .880 | .905 | .935 | .858 | .910 | .911 | .929 | .887 | .830 | .863 | .881 |

Anderson, D. & Trey, S., (2008). *Factor analysis and validation of the Heartstyles Questionnaire*. Unpublished research report. Department of Curriculum Studies, University of British Columbia, Vancouver, Canada.

### Phase 3: 2008 (Stage 2)

- Factor analysis and heuristic validation of Heartstyles questionnaire (Stages 1&2)
- Analyse internal consistency and determine factor structure of 240 items - reduced to 92 items
- Analyse internal consistency and determine factor structure of 92 items
- One construct re-named

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cronbach's Alpha | .80 | .84 | .84 | .88 | .84 | .91 | .80 | .91 | .82 | .84 | .88 | .93 | .85 | .74 | .81 | .881 |

Anderson, D. & Trey, S., (2008). *Factor analysis and heuristic validation of the Heartstyles Questionnaire* (Stages 1&2).
Unpublished research report. Department of Curriculum Studies, University of British Columbia, Vancouver, Canada

### Phase 4: 2011

- Confirmatory factor analysis and re-validation of Heartstyles questionnaire (92 items)
- Analyse internal consistency and determine factor structure to become final 75 item questionnaire

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cronbach's Alpha | .740 | .879 | .777 | .782 | .769 | .814 | .855 | .820 | .861 | .768 | .856 | .676 | .855 | .88 | .756 | .808 |

Anderson, D. & Jahng, N., (2011). *Refinement and validation of the Heartstyles Questionnaire*. Unpublished research report. Department of Curriculum Studies, University of British Columbia, Vancouver, Canada.

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## Norming studies

### 2012

- First norming of Heartstyles questionnaire (75 items)
- Created norm benchmarks for the 16 constructs for Self Report and Others Report data
- Investigation reported in the process indicated that there were multiple statistically significant differences on the HS constructs by variables of Age and Gender

Anderson, D. & Jahng, N., (2012). *Norming of the Heartstyles Questionnaire for Self and Others determinations*. Unpublished research report. Department of Curriculum Studies, University of British Columbia, Vancouver, Canada.

### 2013 – 2014

The first investigation to separate specific norms for Age and Gender for the Heartstyles Indicator was completed in 2014.

Investigation reported in the 2013 study demonstrated that there were multiple statistically significant differences on the HS constructs by variables of Age and Gender.

Anderson, D. & Jahng, N., (2013). *Determination of Statistical Differences by Age and Gender on the Heartstyles Questionnaire (for Self and Others determinations)*. Unpublished research report. Department of Curriculum Studies, University of British Columbia, Vancouver, Canada.

### 2017

- Dynamic norm capability constructed into the online engine.
- Created new norm benchmarks for the 16 constructs for Self Report and Others Report data
- Norm population groups at 2017: Self n= 21,637, Others n= 82,786 The dynamic norm capability means we are continually building the data pool with an ever-increasing norm set which in 2019 has reached Self = 25,924 and Others = 94,367

### From 2017 onwards

Dynamic norm capability was constructed into the online instrument engine, allowing for continuous real time norm calculation, and ever-increasing norm pool as each new Indicator is added.

- Continuous research on correlations between scales, as well as building normative data for the English version and 24 non-english language versions, is ongoing.
- Ongoing correlation studies by researchers for Age, Gender, Nationality, and other factors using the ever-growing norm population are ongoing.

### 2016 – 2018

Translation of the Indicator into 24 non-english languages Translation of the Heartstyles Indicator and validation process into 24 non-english languages began in 2016. The Indicator has been subsequently translated into the following languages:

- Arabic
- Bulgarian
- Dutch
- French EU
- French Canadian
- German
- Greek
- Hebrew
- Hindi
- Indonesian Bahasa
- Italian
- Japanese
- Korean
- Malaysian Bahasa
- Mandarin
- Polish
- Portuguese
- Romanian
- Russian
- Spanish EU
- Spanish Latin American
- Taiwanese (Trad Chinese)
- Thai
- Turkish
- Urdu
- Vietnamese

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Heartstyles