

The Lumina Spark System  
Validity Factsheet

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## Contents

|  |    |
|--|----|
| The Lumina Spark System .....  | 4  |
| Background .....   | 4  |
| Big Five base .....  | 4  |
| Jungian Lens .....   | 4  |
| The Lumina Online System .....   | 4  |
| Practical Application .....  | 4  |
| Business Psychology In Action .....  | 4  |
| Dimensions .....   | 4  |
| The Big Idea .....   | 5  |
| Constructing the Scales .....  | 5  |
| The Lumina Spark Mandala and Colourful Splash .....  | 6  |
| Validity and Reliability .....   | 7  |
| Sample .....   | 7  |
| Internal Consistency Reliabilities – 8 Aspects .....   | 7  |
| Aspect Inter-correlations .....  | 8  |
| Quality – Aspect Correlations .....  | 9  |
| Gender Differences at the Aspect level .....   | 10 |
| Language Differences at the Aspect level .....   | 11 |
| Gender Differences at the Quality Level .....  | 12 |
| Language Differences at the Quality level .....  | 13 |
| Persona differences at the Aspect Level .....  | 14 |
| Gender Differences in the Personas at the Aspect Level .....   | 14 |
| Persona differences at the Quality Level .....   | 15 |
| Language Differences in the Underlying Persona at the Aspect Level .....                                   | 16 |
| Language Differences in the Everyday Persona at the Aspect Level .....                                     | 17 |
| Language Differences in the Overextended Persona at the Aspect Level .....                                 | 18 |
| The Lumina Spark Scoring Method .....  | 19 |
| Comparison with The Birkman Method® - one measure displayed on a non-judgmental bi-directional scale ..... | 19 |
| The Lumina Spark Model – two non-judgmental measures displayed back to back .....                          | 19 |
| Appendices I – Mapping Lumina spark to other models .....  | 20 |
| OCEAN Big Five mnemonic , The Birkman Method®, Jungian models and Lumina Spark .....                       | 20 |
| Appendix II – OCEAN, The Birkman Method® & Lumina Spark on one mandala .....                               | 21 |

## List of Figures

|  |    |
|--|----|
| Figure 1: Lumina Spark Mandala .....   | 6  |
| Figure 2: Aspect Means for the 8 Aspect scales by gender .....                         | 10 |
| Figure 3: Language Differences on the 8 Aspect scales .....                            | 11 |
| Figure 4: Gender Differences on the 24 Quality scales.....                             | 12 |
| Figure 5: Quality Means by language .....  | 13 |
| Figure 6: Persona Scores on the 8 Aspect scales .....                                  | 14 |
| Figure 7: Persona differences at the 24 Quality scale .....                            | 15 |
| Figure 8: Language differences for the 8 Aspect scales – Underlying Persona .....      | 16 |
| Figure 9: Language differences for the 8 Aspect scales – Everyday Persona .....        | 17 |
| Figure 10: Language differences for the 8 Aspect scales – Overextended Persona .....   | 18 |
| Figure 11: Example of ‘Need for Acceptance’ measurement from The Birkman Method® ..... | 19 |
| Figure 12: Independent scoring of opposite scales .....                                | 19 |

## List of Tables

|  |    |
|--|----|
| Table 1: Cronbach Alpha Coefficients for the 8 Aspect scales by language .....       | 7  |
| Table 2: Aspect Intercorrelations .....  | 8  |
| Table 3: Quality and Aspect Correlations in the English Language Sample .....        | 9  |
| Table 4: Gender Differences on the 8 Aspect scales of the Global sample .....        | 10 |
| Table 5: Gender Differences for the 8 Aspect scales of the Global sample.....        | 11 |
| Table 6: Gender Differences for the 24 Qualities scales of the Global sample .....   | 12 |
| Table 7: Language differences for the 24 Qualities scales of the Global sample ..... | 13 |
| Table 8: Gender differences for the 8 Aspect scales of the Global sample .....       | 14 |
| Table 9: Gender differences for the 24 Qualities scales of the Global sample.....    | 15 |
| Table 10: Language differences for the 8 Aspect scales – Underlying Persona.....     | 16 |
| Table 11: Language differences for the 8 Aspect scales – Everyday Persona.....       | 17 |
| Table 12: Language differences for the 8 Aspect scales – everyday persona .....      | 18 |

This document is a summary of the statistical findings which support the internal validity and reliability of the Lumina Spark Model. Full results on Item and Scale development, Reliability, Administration and Scoring, Internal and External Validity studies for different groups of Lumina Spark users, Interpretation of the Portrait as well as Examples of Applications are available in the Lumina Spark Technical Manual which is currently under review by the University of Westminster.

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## The Lumina Spark System

### Background

#### Big Five base

At the heart of the Lumina Spark system is an innovative psychometric model based on the Big Five research paradigm which emerged in the 1980s and 1990s with Costa and McCrae leading the field (1992). Costa and McCrae worked in academia, whereas Lumina Spark has been designed to integrate best practice identified in a range of Big Five and Jungian models for application in industry. In particular, Lumina Spark has set out to using the latest empirical Big5 research as its foundation while maintaining a link to the Jungian approach.

#### Jungian Lens

The Lumina Spark system also makes practical use of many of the profound ideas developed by Carl Gustav Jung. Lumina Spark enables practitioners to use a Jungian lens to utilize concepts such as individuation, projection, the shadow, psychological type and the integration of opposite qualities within us.

#### The Lumina Online System

The application of this model is made possible through Lumina's pioneering online technology. Working in over ten languages, this technology enables the speedy customisation of Lumina Spark's psychometric analysis. Each individual that completes a Lumina Spark questionnaire receives a detailed report which is made available online so that each individual has easy access to their own personalised portrait.

#### Practical Application

To support the practical application of the model, the Lumina Spark system also puts into the hands of the practitioner state of the art workshop designs, workbooks, coaching frameworks, e-learning and action learning concepts. These resources have helped build Lumina Spark's reputation as a system that drives practical application that delivers results.

#### Business Psychology In Action

Lumina Spark's innovative design was conceived of by Stewart Desson, a humanistic psychologist working at the University of Westminster's Business Psychology Centre. The design embraces the core values of humanistic psychology – a fundamentally optimistic belief in the potential of all human beings to learn and grow. Stewart is also the Director of Research as well as the CEO and founder of Lumina Learning.

### Dimensions

Lumina Spark is based on trait theory and measures 24 traits on a continuum. Each trait independently measures the level to which each individual uses opposite, competing and (sometimes) seemingly contradictory Aspects of their personality, e.g. it measures the way an individual may use introversion *and* extraversion.

For use with clients, the traits are described as 'Your 24 Qualities'. Each quality is split into three *personas*:

- how you function naturally
- your everyday behaviour and
- how you sometimes overextend yourself.

The model has simplicity and depth. It can be used:

- at a high level, using 4 memorable colours to describe clusters of Qualities
- at an 8 Aspect level
- at a detailed full 24 Quality level.

## The Big Idea

The Lumina Spark questionnaire does not ‘force the choice’. Unlike many psychometric models that aim to identify a person’s ‘type’ by asking to choose between statements, Lumina Spark measures the individual’s traits on a continuum with a Likert scale.

The Lumina Spark model is based on trait assumptions, and is founded on an empirical Five-Factor Model paradigm. In this way, individuals differ in the quantity of a quality they possess. Conversely, with a typing assumption, individuals are deemed to ‘have’ or ‘not have’ a quality. Typing models normally make use of dichotomous measurement techniques, and do not normally assess the intensity of a quality.

The Lumina Spark approach takes this ‘big idea’ further than just ‘trait, not type’. Although many other Big Five models also use a Likert scale, they typically still only measure one end of a polarity. For example, *Extraversion* may be measured directly and an absence of *Extraversion* is often assumed to be *Introversion*. In contrast, with Lumina Spark, a person may claim qualities at both ends of a polarity. When working in organisations to help people develop, being able to develop and integrate both ends of a polarity is of great benefit.

## Constructing the Scales

Lumina Spark’s 8 Aspects and 24 Qualities were created through the application of test theory as defined by Kline in the ‘Handbook of Psychological Testing’ (1993) and the APA ‘Standards for educational and psychological testing’ (1999). A pool of items was independently created by a team of business psychologists using the big five paradigm. Each created their own set of items based on an extensive literature review and their experience in the field. Through expert discussion, the items were then synthesized in order to create a base item pool of 410 items.

The wording was then enhanced through the use of a wider review group who had experience in designing psychometric and competence-based questionnaires for use in organisations. Where there was dissent over the quality of an item, the item was discarded. The items were then evaluated with a sample of test users (N=687) reflecting the Lumina Spark target population. Only items with high content validity, contribution to Cronbach Alpha and support for construct validity assessed through correlation and factor analysis were included in the Lumina Spark questionnaire. An iterative evaluation approach was adopted until 144 items were decided upon.

These 144 questions measure 24 Qualities. Each quality is measured by 6 items on a 5 point Likert scale. Users can Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4) or Strongly Agree (5). Two items in each quality are used to measure the Underlying, Everyday and Overextended personas. There are three Qualities per Aspect, meaning each Aspect is measured by 18 questions.

## The Lumina Spark Mandala and Colourful Splash

The mandala works as Lumina Spark's key visual aid. In the inner ring are the eight Aspects. Each Aspect consists of three Qualities, shown on the outer ring. Each quality is measured by six questions in the questionnaire. Two questions measure each persona in every quality.

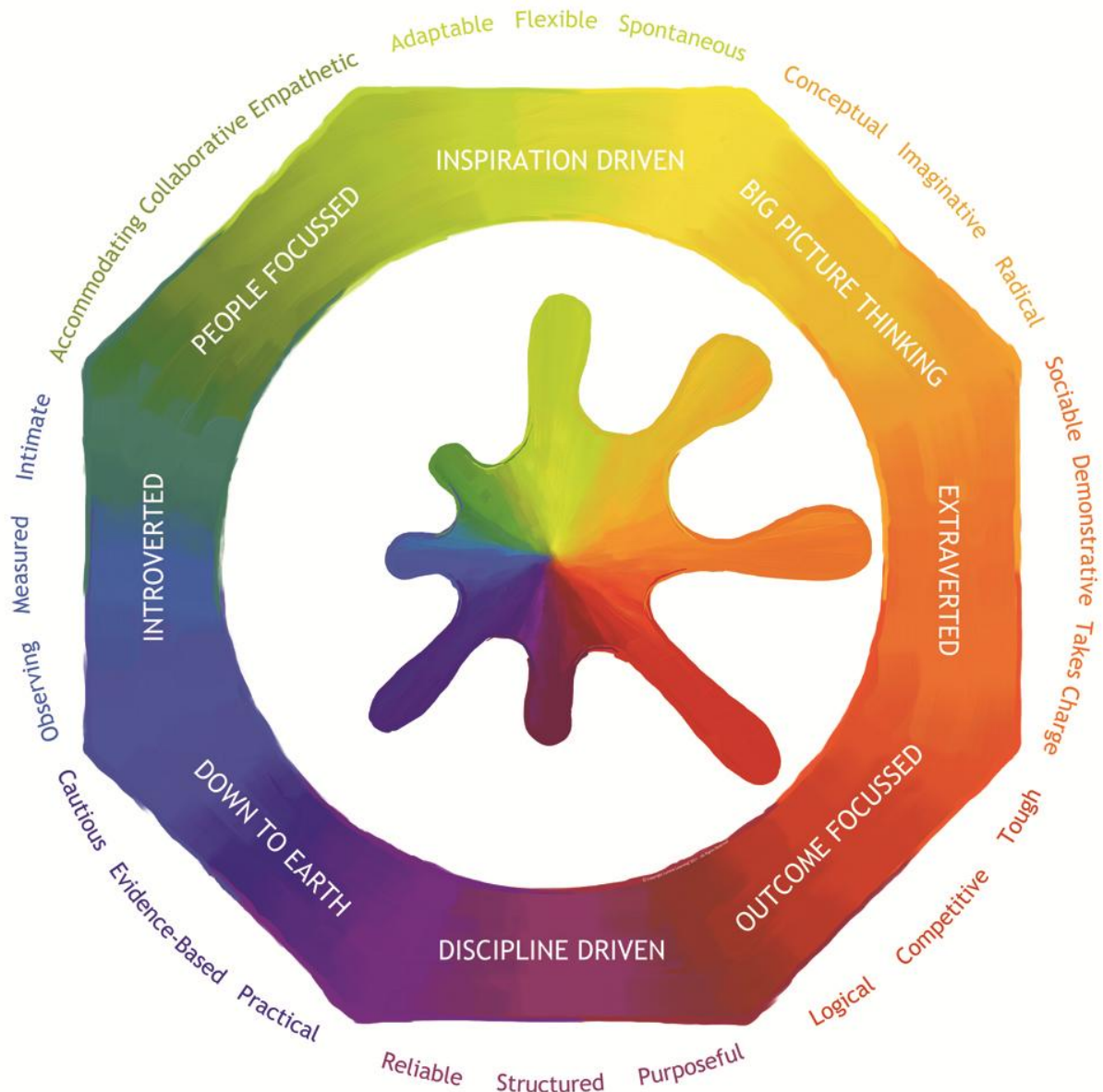


Figure 1: Lumina Spark Mandala

The mandala is designed to show how Aspects of personality relate to one another. The closer together two Aspects or Qualities are on the mandala, the more related they are. Aspects and Qualities on the other side of the mandala are polar opposites. For example, people who are high on *Big Picture Thinking* are also more likely to be *Extraverted* and *Inspiration Driven*, but unlikely to score highly on *Down to Earth*.

## Validity and Reliability

### Sample

After data cleaning to remove test users and retakes, 9628 cases (4710 male and 4918 female) were analysed. For the purpose of examining linguistic differences, the sample was divided into 5 major language groups: English (6210) Dutch (1523), German (477), Japanese (857), French Canadian (372). For some of the analyses, data is presented for several subgroups: English UK (3906), English USA (1103), English Canadian (1043), English South Africa (158), Dutch (1523), German (477), Japanese (857), French Canadian (372), and Slovakian (189).

### Internal Consistency Reliabilities – 8 Aspects

The Cronbach Alpha reliability coefficients were assessed for each Aspect. The coefficients are consistently high across the five major language samples.

Table 1: Cronbach Alpha Coefficients for the 8 Aspect scales by language

|                     | Global | English | Dutch | French | German | Japanese |
|---------------------|--------|---------|-------|--------|--------|----------|
| People Focussed     | .79    | .80     | .78   | .78    | .82    | .76      |
| Inspiration Driven  | .76    | .77     | .81   | .69    | .77    | .68      |
| Big Picture Thinker | .81    | .81     | .81   | .76    | .81    | .81      |
| Extraverted         | .85    | .85     | .86   | .86    | .84    | .87      |
| Outcome Focussed    | .82    | .83     | .80   | .83    | .82    | .79      |
| Discipline Driven   | .74    | .75     | .77   | .75    | .80    | .65      |
| Down to Earth       | .81    | .82     | .78   | .83    | .79    | .80      |
| Introverted         | .82    | .82     | .81   | .83    | .83    | .78      |



## Aspect Inter-correlations

The Lumina Spark model hypothesises that personality differences can be modelled on a mandala

- with adjacent Aspects being positively correlated
- with inverse correlations between opposite Aspects

For example, *People Focused* should correlate positively with *Inspiration Driven* to the right and *Introversion* to the left, and negatively with *Outcome Focussed* from the opposite side of the circle. This hypothesis is borne out by the empirical data for the global sample. Table 2, (to be read row-by row) shows how the Aspects correlate with each other as predicted by theory.

Expected correlations are shown in light grey. Thus *Extraverted* correlates highly with *Outcome Focused* and *Big Picture Thinker* and negatively with its opposite, *Introverted*. This reflects the structure displayed on the Lumina Spark mandala. The coefficient highlighted in red highlights a correlation outside of the hypothesis. As can be seen below, there is a tendency for those high in *Outcome Focussed* to also be *Big Picture Thinking* as well as *Discipline Driven*.

Table 2: Aspect Intercorrelations

|                     | People Focussed | Insp Driven | Big Pic Thinker | Extra-verted | Outcome Focussed | Discipline Driven | Down to Earth | Intro-verted |
|---------------------|-----------------|-------------|-----------------|--------------|------------------|-------------------|---------------|--------------|
| People Focussed     | -               | .31         | -.01            | -.04         | -.49             | .03               | .14           | .21          |
| Inspiration Driven  | .31             | -           | .41             | .23          | -.08             | -.46              | -.24          | .00          |
| Big Picture Thinker | -.01            | .41         | -               | .47          | .31              | -.08              | -.32          | -.12         |
| Extraverted         | -.04            | .23         | .47             | -            | .34              | .01               | -.32          | -.67         |
| Outcome Focussed    | -.49            | -.08        | .31             | .34          | -                | .28               | .16           | -.06         |
| Discipline Driven   | .03             | -.46        | -.08            | .01          | .28              | -                 | .51           | .19          |
| Down to Earth       | .14             | -.24        | -.32            | -.32         | .16              | .51               | -             | .48          |
| Introverted         | .21             | .00         | -.12            | -.67         | -.06             | .19               | .48           | -            |

## Quality – Aspect Correlations

The table below shows how the Qualities correlate with the Aspects across English language groups. Correlations of Qualities with the Aspect they belong to are shown in dark grey boxes. They should also have an inverse correlation with their opposite Qualities, which are shown in light grey.

Table 3: Quality and Aspect Correlations in the English Language Sample

|                | People<br>Focus | Insp-<br>Driven | Big Pic<br>Thinker | Extra-<br>verted | Outcom<br>Focus | Disci<br>Driven | Down to<br>Earth | Intro-<br>verted |
|----------------|-----------------|-----------------|--------------------|------------------|-----------------|-----------------|------------------|------------------|
| Accommodating  | .82             | .23             |                    | -.27             | -.47            |                 | .29              | .39              |
| Collaborative  | .73             | .20             |                    |                  | -.28            |                 |                  |                  |
| Empathetic     | .85             | .32             |                    |                  | -.39            |                 |                  |                  |
| Adaptable      | .39             | .78             | .22                |                  | -.20            | -.33            |                  |                  |
| Flexible       | .24             | .86             | .32                | .16              |                 | -.48            | -.24             |                  |
| Spontaneous    | .17             | .83             | .46                | .35              |                 | -.33            | -.25             |                  |
| Conceptual     |                 | .22             | .70                | .34              | .24             |                 | -.26             |                  |
| Imaginative    |                 | .42             | .78                | .35              |                 |                 | -.29             |                  |
| Radical        | -.16            | .32             | .85                | .43              | .36             |                 | -.36             | -.16             |
| Sociable       | .15             | .31             | .28                | .80              |                 |                 | -.25             | -.58             |
| Demonstrative  |                 | .23             | .40                | .86              | .17             |                 | -.27             | -.56             |
| Takes Charge   | -.29            |                 | .45                | .77              | .54             |                 | -.25             | -.49             |
| Tough          | -.51            |                 | .36                | .43              | .83             |                 |                  | -.22             |
| Competitive    | -.33            |                 | .23                | .28              | .77             | .18             |                  |                  |
| Logical        | -.26            | -.19            |                    |                  | .68             | .34             | .35              | .21              |
| Purposeful     |                 | -.40            |                    | .17              | .40             | .77             | .30              |                  |
| Structured     |                 | -.42            | -.20               |                  |                 | .77             | .57              | .24              |
| Reliable       |                 | -.18            |                    |                  |                 | .64             | .24              | .15              |
| Practical      |                 | -.17            | -.29               | -.15             | .22             | .38             | .71              | .29              |
| Evidence Based |                 | -.30            | -.19               | -.22             | .16             | .51             | .81              | .32              |
| Cautious       | .19             |                 | -.28               | -.35             |                 | .30             | .82              | .50              |
| Observing      |                 |                 |                    | -.61             |                 | .16             | .40              | .88              |
| Measured       |                 |                 |                    | -.52             | .16             | .25             | .46              | .82              |
| Intimate       | .44             |                 |                    | -.52             | -.31            |                 | .32              | .78              |

Correlations between .15 and -.15 have been suppressed for clarity. We can see that each set of Qualities correlates well with their related Aspects and, as expected, the cluster of coefficients around each dark grey box indicates that neighbouring Qualities also cohere.

## Gender Differences at the Aspect level

Responses of males and females were compared at the Aspect level. Answering 'neutral' to every question in an Aspect would give a raw score of 54, so scores above or below this point indicate a preference towards agreeing or disagreeing. The diagrams below are derived from the means of men and women across all major language groups.

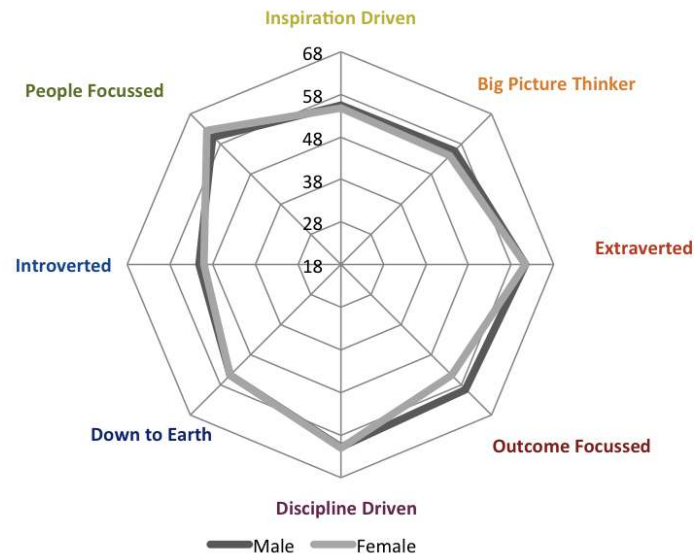


Figure 2: Aspect Means for the 8 Aspect scales by gender

A comparison of the means, reveals significant differences for 5 of the 8 dimensions. Women have higher scores on People-focussed while men score significantly higher on Inspiration Driven, Big Picture Thinker, Outcome focussed and Introverted. Note: \* significant differences at  $p > .001$

Table 4: Gender Differences on the 8 Aspect scales of the Global sample

|                     | Men   | Women |   |
|---------------------|-------|-------|---|
| People Focussed     | 60.33 | 62.50 | * |
| Inspiration Driven  | 55.38 | 54.74 | * |
| Big Picture Thinker | 55.72 | 54.15 | * |
| Extraverted         | 61.39 | 61.32 |   |
| Outcome Focussed    | 59.45 | 54.73 | * |
| Discipline Driven   | 60.82 | 61.16 |   |
| Down to Earth       | 54.81 | 54.59 |   |
| Introverted         | 51.26 | 50.18 | * |

## Language Differences at the Aspect level

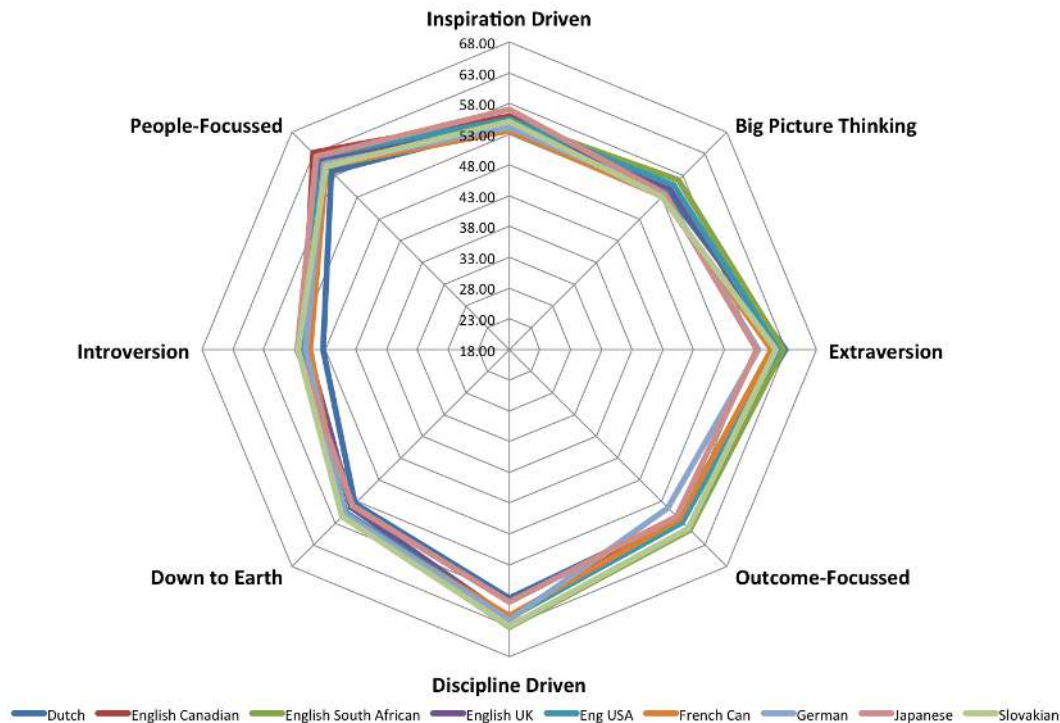


Figure 3: Language Differences on the 8 Aspect scales

As with gender, absolute differences between language groups are minimal. We can see that Dutch respondents claim the least *Introversion*, German respondents the least *Outcome Focussed*, English Canadian the most *People Focussed* and Japanese the most *Inspiration Driven*.

In this table we see those differences up close. The top three scores in each Aspect are shown in green, the lowest three are shown in red, and highest and lowest scores for each Aspect are bold.

Table 5: Gender Differences for the 8 Aspect scales of the Global sample

|                     | Dutch        | South African | UK    | USA   | Can (en)     | Can (fr)     | German       | Japanese     |
|---------------------|--------------|---------------|-------|-------|--------------|--------------|--------------|--------------|
| People Focussed     | <b>58.92</b> | 60.66         | 61.82 | 62.31 | <b>63.20</b> | 60.19        | 60.65        | 62.35        |
| Inspiration Driven  | 54.42        | 55.31         | 54.78 | 55.37 | 55.97        | <b>53.57</b> | 54.05        | <b>57.04</b> |
| Big Picture Thinker | 54.35        | <b>56.95</b>  | 55.31 | 55.79 | 55.39        | 53.23        | 53.82        | 53.82        |
| Extraverted         | <b>62.97</b> | 62.58         | 61.51 | 61.73 | 61.83        | 60.68        | 58.55        | <b>58.28</b> |
| Outcome Focussed    | 56.80        | <b>59.50</b>  | 57.29 | 57.73 | 56.55        | 57.07        | <b>54.53</b> | 56.48        |
| Discipline Driven   | <b>58.47</b> | <b>63.18</b>  | 61.69 | 61.69 | 61.63        | 61.35        | 62.02        | 59.08        |
| Down to Earth       | <b>53.51</b> | 55.73         | 54.40 | 55.56 | 55.57        | <b>56.38</b> | 55.87        | 54.05        |
| Introverted         | <b>48.29</b> | 50.93         | 50.74 | 51.35 | 51.51        | 50.46        | 51.18        | <b>52.47</b> |

## Gender Differences at the Quality Level

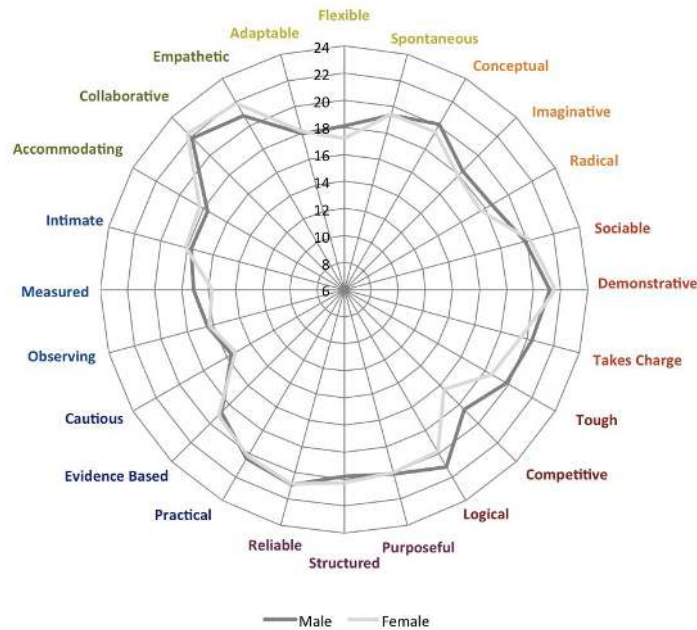


Figure 4: Gender Differences on the 24 Quality scales

By looking at the quality level we can see that men report being more logical, tough and competitive than women, and women report being more empathetic than men. Men also tend to be more measured. Although, a T-test revealed sig. differences (marked with \*), overall, the similarities are far more noteworthy than the differences.

Table 6: Gender Differences for the 24 Qualities scales of the Global sample

|               | Men   | Women |   |   | Men   | Women |   |
|---------------|-------|-------|---|---|-------|-------|---|
| Accommodating | 17.62 | 18.29 | * | Tough<br>Competitive<br>Logical<br>Purposeful<br>Structured<br>Reliable<br>Practical<br>Evidence Based<br>Cautious<br>Observing<br>Measured<br>Intimate | 19.83 | 18.55 | * |
| Collaborative | 21.86 | 22.33 | * |   | 18.51 | 16.40 | * |
| Empathetic    | 20.85 | 21.87 | * |   | 21.10 | 19.78 | * |
| Adaptable     | 17.94 | 18.10 | * |   | 20.11 | 20.01 |   |
| Flexible      | 18.10 | 17.20 | * |   | 19.79 | 20.24 | * |
| Spontaneous   | 19.34 | 19.44 |   |   | 20.92 | 20.90 |   |
| Conceptual    | 20.09 | 19.43 | * |   | 20.41 | 20.22 | * |
| Imaginative   | 18.41 | 17.93 | * |   | 18.83 | 19.15 | * |
| Radical       | 18.55 | 17.64 | * |   | 15.57 | 15.22 | * |
| Sociable      | 19.82 | 20.21 | * |   | 16.45 | 16.31 |   |
| Demonstrative | 21.20 | 21.60 | * |   | 17.10 | 15.76 | * |
| Takes Charge  | 20.37 | 19.51 | * |   | 17.71 | 18.11 | * |

## Language Differences at the Quality level

Looking at language differences at the quality level, we also find an overall similar pattern.

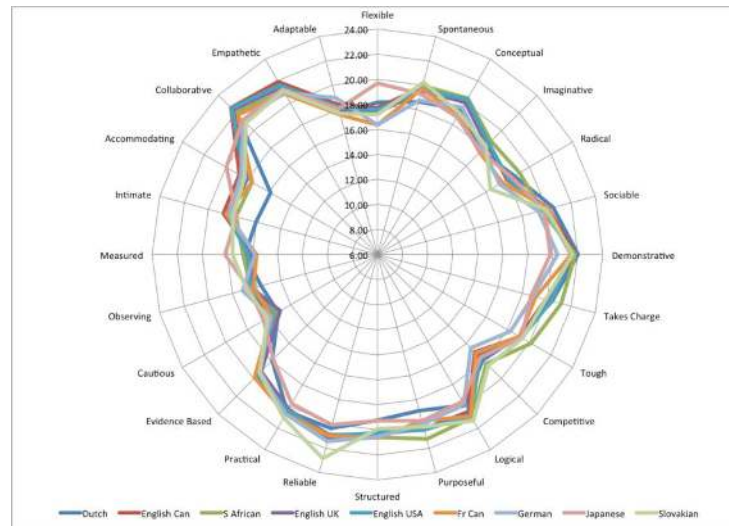


Figure 5: Quality Means by language

Table 7: Language differences for the 24 Qualities scales of the Global sample

|                | Dutch | Can (en) | S African | UK    | USA   | Can (fr) | German | Japanese |
|----------------|-------|----------|-----------|-------|-------|----------|--------|----------|
| Accommodating  | 15.86 | 18.73    | 17.58     | 18.04 | 18.20 | 17.57    | 18.61  | 19.96    |
| Collaborative  | 21.94 | 22.57    | 21.97     | 22.34 | 22.49 | 21.79    | 21.14  | 21.18    |
| Empathetic     | 21.11 | 21.91    | 21.11     | 21.43 | 21.63 | 20.83    | 20.91  | 21.21    |
| Adaptable      | 17.65 | 18.42    | 18.07     | 17.95 | 18.18 | 17.53    | 18.94  | 18.06    |
| Flexible       | 18.15 | 17.73    | 17.27     | 17.30 | 17.57 | 16.35    | 16.36  | 19.68    |
| Spontaneous    | 18.61 | 19.83    | 19.97     | 19.52 | 19.63 | 19.69    | 18.76  | 19.30    |
| Conceptual     | 19.40 | 19.98    | 20.39     | 20.03 | 20.30 | 18.88    | 19.57  | 18.69    |
| Imaginative    | 17.66 | 18.51    | 18.80     | 18.33 | 18.55 | 17.53    | 17.94  | 17.65    |
| Radical        | 18.58 | 17.95    | 19.07     | 18.09 | 18.08 | 17.51    | 17.23  | 18.33    |
| Sociable       | 20.53 | 20.14    | 19.60     | 19.96 | 19.88 | 20.14    | 19.33  | 19.78    |
| Demonstrative  | 22.01 | 21.81    | 21.80     | 21.48 | 21.49 | 21.47    | 20.38  | 19.81    |
| Takes Charge   | 20.42 | 19.88    | 21.18     | 20.07 | 20.37 | 19.07    | 18.84  | 18.69    |
| Tough          | 19.04 | 19.11    | 20.17     | 19.27 | 19.27 | 19.08    | 18.24  | 19.29    |
| Competitive    | 17.87 | 16.97    | 18.28     | 17.35 | 17.61 | 17.10    | 16.53  | 17.63    |
| Logical        | 19.89 | 20.47    | 21.05     | 20.67 | 20.84 | 20.89    | 19.76  | 19.56    |
| Purposeful     | 18.89 | 20.38    | 21.23     | 20.36 | 20.48 | 19.74    | 20.03  | 19.74    |
| Structured     | 19.22 | 20.33    | 20.59     | 20.21 | 20.24 | 20.63    | 20.55  | 19.27    |
| Reliable       | 20.36 | 20.91    | 21.36     | 21.11 | 20.96 | 20.98    | 21.45  | 20.07    |
| Practical      | 20.42 | 20.29    | 20.58     | 20.24 | 20.40 | 20.72    | 20.70  | 19.75    |
| Evidence Based | 17.93 | 19.62    | 19.77     | 19.17 | 19.59 | 19.88    | 19.27  | 17.80    |
| Cautious       | 15.17 | 15.66    | 15.38     | 14.98 | 15.56 | 15.78    | 15.90  | 16.51    |
| Observing      | 15.64 | 16.74    | 16.47     | 16.37 | 16.54 | 16.26    | 17.16  | 16.61    |
| Measured       | 16.59 | 16.04    | 16.74     | 16.14 | 16.36 | 15.66    | 15.79  | 18.21    |
| Intimate       | 16.06 | 18.73    | 17.72     | 18.23 | 18.45 | 18.55    | 18.24  | 17.66    |



## Persona differences at the Aspect Level

Lumina Spark measures each quality with six questions, each of which also measures that quality in the context of a persona. The three personas are Everyday, Underlying and Overextended. Everyday measures the way we act and appear to others on a day-to-day basis, Underlying measures how we are most comfortable and Overextended measures how we can behave when we are under pressure.

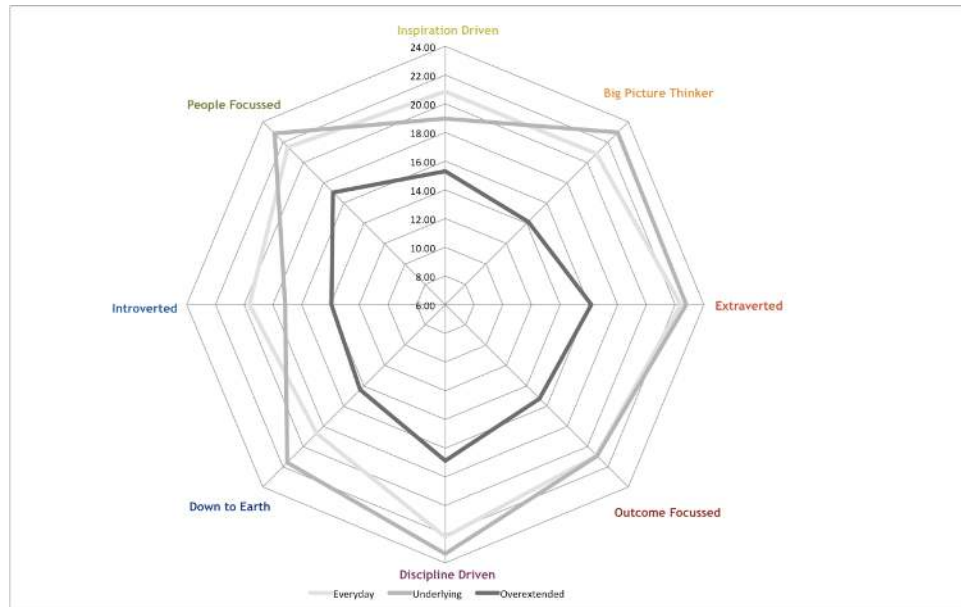


Figure 6: Persona Scores on the 8 Aspect scales

## Gender Differences in the Personas at the Aspect Level

Table 8: Gender differences for the 8 Aspect scales of the Global sample

|                     | Everyday     |              | Underlying   |              | Overextended |              |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                     | Male         | Female       | Male         | Female       | Male         | Female       |
| People Focussed     | 21.11        | <b>21.91</b> | 22.39        | <b>23.31</b> | 16.83        | <b>17.28</b> |
| Inspiration Driven  | <b>20.85</b> | 20.82        | <b>18.98</b> | 18.91        | <b>15.55</b> | 15.01        |
| Big Picture Thinker | <b>21.42</b> | 20.28        | 23.27        | <b>22.63</b> | <b>14.37</b> | 13.95        |
| Extraverted         | 22.12        | <b>22.68</b> | <b>22.86</b> | 22.71        | <b>16.40</b> | 15.93        |
| Outcome Focussed    | <b>21.70</b> | 20.09        | <b>21.56</b> | 20.31        | <b>16.18</b> | 14.34        |
| Discipline Driven   | 22.09        | <b>22.28</b> | 23.08        | <b>23.65</b> | <b>16.96</b> | 16.80        |
| Down to Earth       | <b>18.76</b> | 18.64        | 21.52        | <b>21.65</b> | <b>14.53</b> | 14.30        |
| Introverted         | <b>19.96</b> | 19.34        | <b>17.15</b> | 17.14        | <b>14.14</b> | 13.69        |

It was hypothesised that overextended behaviour occurs less frequently than the everyday/underlying and lower raw scores were expected for the overextended scales. This expected pattern is reflected in the above data.

## Persona differences at the Quality Level

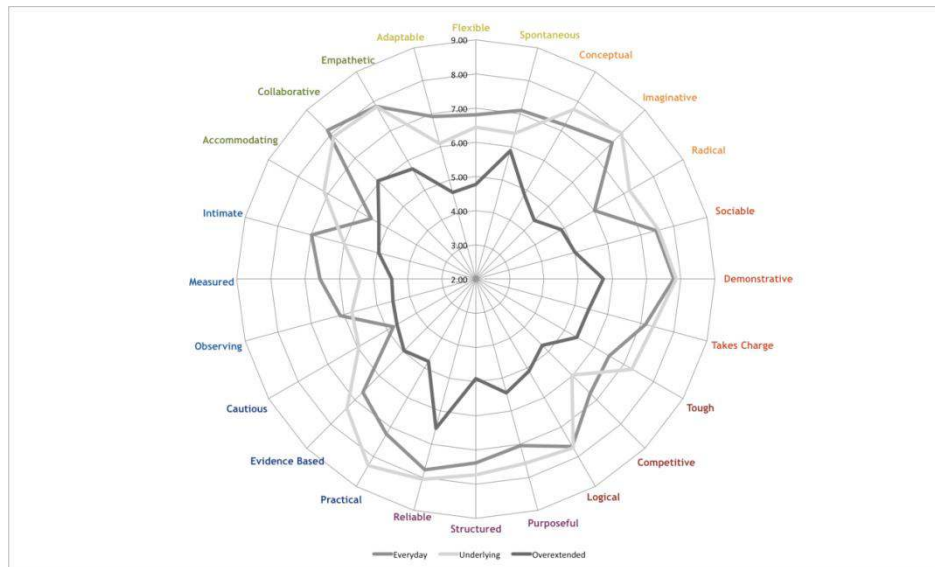


Figure 7: Persona differences at the 24 Quality scale

Table 9: Gender differences for the 24 Qualities scales of the Global sample

|                | Everyday    |             | Underlying  |             | Overextended |             |
|----------------|-------------|-------------|-------------|-------------|--------------|-------------|
|                | Male        | Female      | Male        | Female      | Male         | Female      |
| Accommodating  | 5.48        | <b>5.60</b> | 6.92        | <b>7.35</b> | 5.23         | <b>5.34</b> |
| Collaborative  | 8.03        | <b>8.26</b> | 7.85        | <b>7.94</b> | 5.98         | <b>6.13</b> |
| Empathetic     | 7.60        | <b>8.06</b> | 7.63        | <b>8.01</b> | 5.62         | <b>5.81</b> |
| Adaptable      | <b>7.04</b> | 6.81        | <b>6.21</b> | 5.99        | <b>4.86</b>  | 4.39        |
| Flexible       | <b>6.85</b> | 6.77        | 6.31        | <b>6.57</b> | <b>4.78</b>  | 4.76        |
| Spontaneous    | 6.96        | <b>7.24</b> | <b>6.47</b> | 6.34        | <b>5.91</b>  | 5.86        |
| Conceptual     | <b>7.40</b> | 6.99        | <b>7.84</b> | 7.61        | <b>4.85</b>  | 4.83        |
| Imaginative    | <b>7.72</b> | 7.56        | <b>8.15</b> | 7.91        | <b>4.54</b>  | 4.30        |
| Radical        | <b>6.29</b> | 5.73        | <b>7.28</b> | 7.10        | <b>4.98</b>  | 4.81        |
| Sociable       | 7.36        | <b>7.56</b> | 7.43        | <b>7.66</b> | <b>5.03</b>  | 4.99        |
| Demonstrative  | 7.52        | <b>8.08</b> | <b>7.89</b> | 7.85        | <b>5.79</b>  | 5.68        |
| Takes Charge   | <b>7.25</b> | 7.04        | <b>7.54</b> | 7.21        | <b>5.58</b>  | 5.26        |
| Tough          | <b>6.79</b> | 6.23        | <b>7.45</b> | 7.09        | <b>5.59</b>  | 5.23        |
| Competitive    | <b>7.11</b> | 6.36        | <b>6.24</b> | 5.71        | <b>5.16</b>  | 4.34        |
| Logical        | <b>7.80</b> | 7.50        | <b>7.87</b> | 7.51        | <b>5.44</b>  | 4.77        |
| Purposeful     | <b>7.07</b> | 7.01        | 7.51        | <b>7.63</b> | <b>5.53</b>  | 5.37        |
| Structured     | 7.24        | <b>7.51</b> | 7.63        | <b>7.83</b> | <b>4.92</b>  | 4.91        |
| Reliable       | <b>7.78</b> | 7.76        | 7.94        | <b>8.19</b> | 6.52         | <b>6.52</b> |
| Practical      | <b>7.29</b> | 7.18        | <b>8.31</b> | 8.28        | <b>4.81</b>  | 4.75        |
| Evidence Based | 6.61        | <b>6.76</b> | 7.25        | <b>7.43</b> | <b>4.97</b>  | 4.97        |
| Cautious       | <b>4.87</b> | 4.69        | <b>5.96</b> | 5.94        | <b>4.74</b>  | 4.59        |
| Observing      | <b>6.19</b> | 6.03        | 5.69        | <b>5.82</b> | <b>4.57</b>  | 4.46        |
| Measured       | <b>6.82</b> | 6.30        | <b>5.57</b> | 5.23        | <b>4.71</b>  | 4.23        |
| Intimate       | 6.96        | <b>7.01</b> | 5.89        | <b>6.09</b> | 4.86         | <b>5.01</b> |



## Language Differences in the Underlying Persona at the Aspect Level

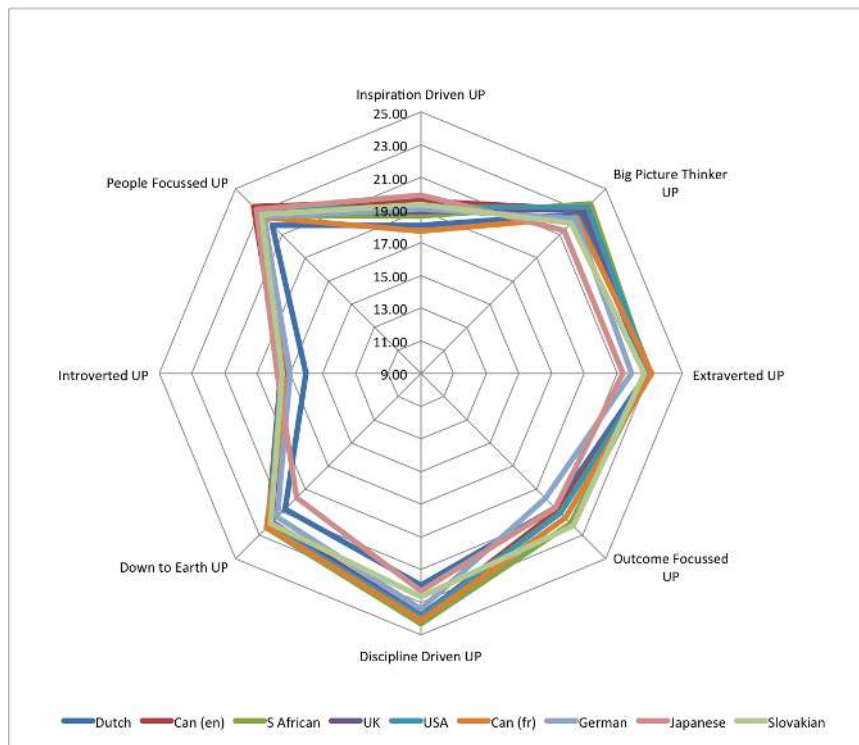


Figure 8: Language differences for the 8 Aspect scales – Underlying Persona

Table 10: Language differences for the 8 Aspect scales – Underlying Persona

|                        | Dutch | Can<br>(en) | S African | UK    | USA   | Can (fr) | German | Japanese |
|------------------------|-------|-------------|-----------|-------|-------|----------|--------|----------|
| People Focussed UP     | 21.84 | 23.47       | 22.67     | 23.02 | 23.13 | 22.51    | 22.60  | 23.21    |
| Inspiration Driven UP  | 18.08 | 19.59       | 18.66     | 18.91 | 19.22 | 17.74    | 19.07  | 19.91    |
| Big Picture Thinker UP | 22.79 | 23.17       | 23.72     | 23.27 | 23.41 | 22.52    | 22.38  | 21.37    |
| Extraverted UP         | 22.86 | 23.07       | 22.96     | 23.00 | 23.00 | 23.12    | 21.91  | 21.37    |
| Outcome Focussed UP    | 20.63 | 20.85       | 21.96     | 21.07 | 21.05 | 21.49    | 19.78  | 20.62    |
| Discipline Driven UP   | 21.95 | 23.87       | 24.32     | 23.79 | 23.90 | 24.13    | 23.41  | 22.33    |
| Down to Earth UP       | 20.75 | 22.25       | 22.37     | 21.88 | 22.17 | 22.31    | 21.42  | 19.75    |
| Introverted UP         | 16.02 | 17.57       | 17.15     | 17.24 | 17.53 | 17.10    | 16.97  | 17.77    |

## Language Differences in the Everyday Persona at the Aspect Level

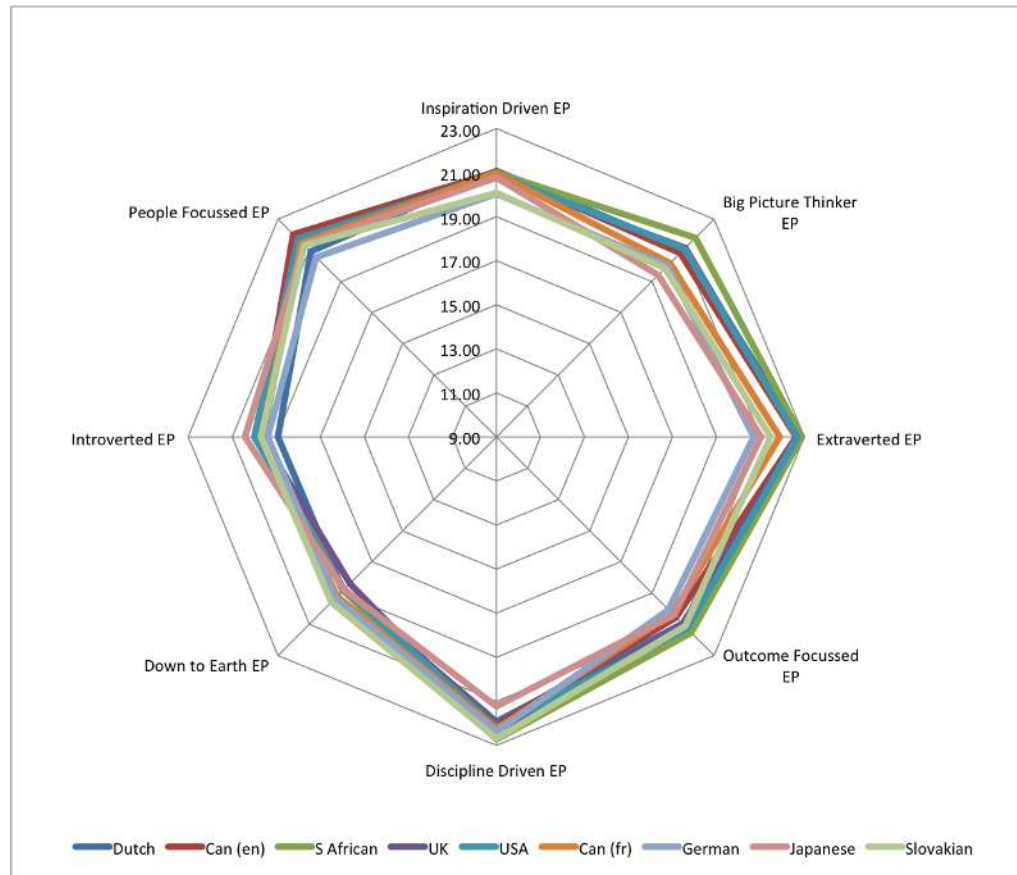


Figure 9: Language differences for the 8 Aspect scales – Everyday Persona

Table 11: Language differences for the 8 Aspect scales – Everyday Persona

|                        | Dutch        | Can<br>(en)  | S African    | UK           | USA   | Can (fr)     | German       | Japanese     |
|------------------------|--------------|--------------|--------------|--------------|-------|--------------|--------------|--------------|
| People Focussed EP     | 20.91        | <b>22.03</b> | 21.53        | 21.74        | 21.72 | 21.48        | <b>20.56</b> | 21.34        |
| Inspiration Driven EP  | <b>21.08</b> | 21.06        | 21.00        | 20.78        | 20.92 | 20.98        | <b>20.06</b> | 20.78        |
| Big Picture Thinker EP | 21.05        | 20.84        | <b>21.81</b> | 21.17        | 21.11 | 20.19        | 19.99        | <b>19.38</b> |
| Extraverted EP         | 22.87        | 22.63        | <b>22.89</b> | 22.67        | 22.69 | 21.88        | <b>20.70</b> | 21.03        |
| Outcome Focussed EP    | 20.97        | 20.55        | <b>21.53</b> | 21.03        | 21.27 | 20.32        | <b>20.08</b> | 20.42        |
| Discipline Driven EP   | 21.92        | 22.08        | <b>22.74</b> | 22.46        | 22.18 | 22.26        | 22.37        | <b>21.23</b> |
| Down to Earth EP       | 18.83        | 18.77        | 18.82        | <b>18.42</b> | 18.76 | <b>19.23</b> | 19.31        | 18.78        |
| Introverted EP         | <b>18.94</b> | 19.81        | 19.63        | 19.64        | 19.98 | 19.67        | 19.38        | <b>20.40</b> |

## Language Differences in the Overextended Persona at the Aspect Level

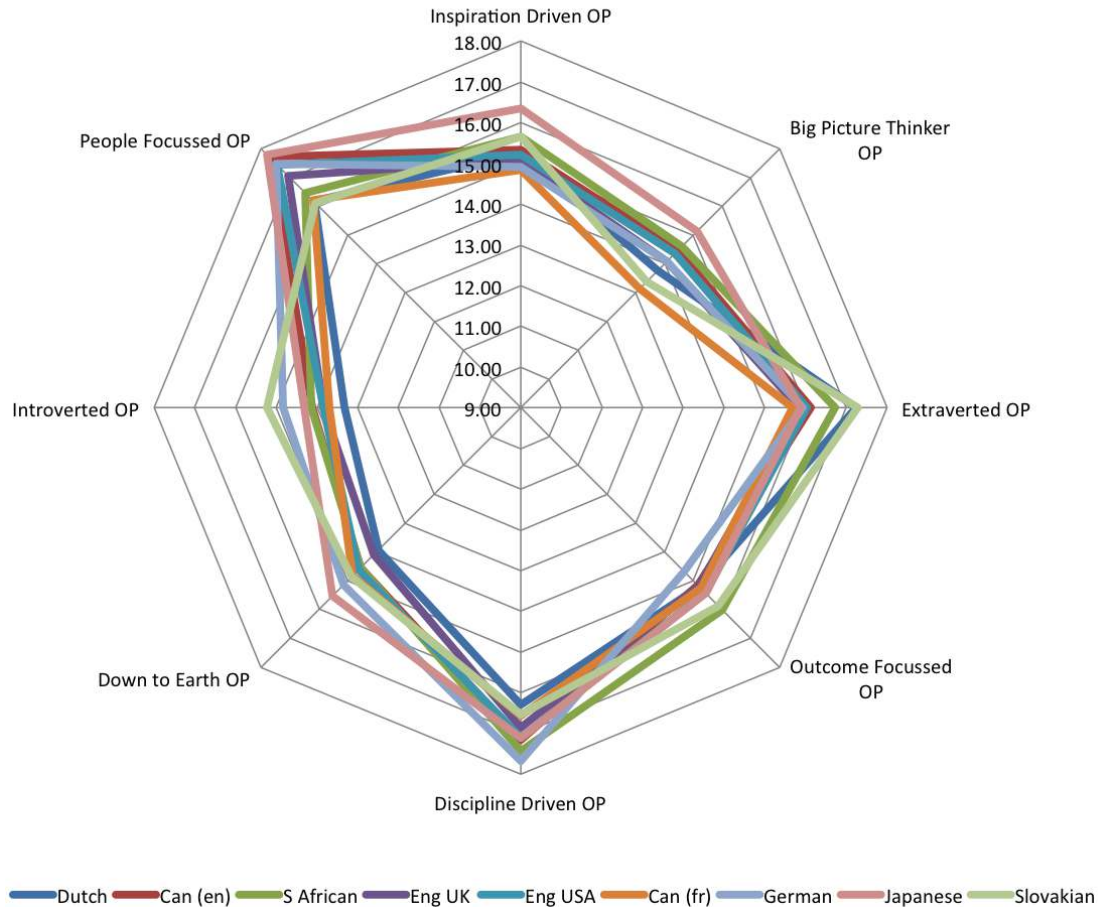


Table 12: Language differences for the 8 Aspect scales – everyday persona

|                        | Dutch | S African | UK    | USA   | Can (en) | Can (fr) | German | Japanese |
|------------------------|-------|-----------|-------|-------|----------|----------|--------|----------|
| People Focussed OP     | 16.17 | 16.47     | 17.07 | 17.45 | 17.71    | 16.20    | 17.49  | 17.80    |
| Inspiration Driven OP  | 15.26 | 15.65     | 15.10 | 15.22 | 15.33    | 14.85    | 14.92  | 16.35    |
| Big Picture Thinker OP | 13.78 | 14.62     | 14.07 | 14.35 | 14.46    | 13.14    | 14.08  | 15.13    |
| Extraverted OP         | 17.24 | 16.73     | 15.84 | 16.04 | 16.13    | 15.68    | 15.94  | 15.88    |
| Outcome Focussed OP    | 15.20 | 16.01     | 15.19 | 15.42 | 15.15    | 15.26    | 14.68  | 15.44    |
| Discipline Driven OP   | 16.30 | 17.43     | 16.85 | 17.10 | 17.16    | 16.57    | 17.67  | 17.11    |
| Down to Earth OP       | 13.94 | 14.54     | 14.10 | 14.62 | 14.56    | 14.84    | 15.14  | 15.52    |
| Introverted OP         | 13.33 | 14.15     | 13.85 | 13.85 | 14.12    | 13.69    | 14.83  | 14.30    |

## The Lumina Spark Scoring Method

### Comparison with The Birkman Method® - one measure displayed on a non-judgmental bi-directional scale

The Birkman Method® is a highly validated and proven system, that has been used here for illustrative purposes. The Birkman Method's® display of traits is typical of many Big Five and other trait based psychometrics. An example from a Birkman profile is shown below.

### YOUR PERSONAL STRENGTHS AND NEEDS SOCIAL RELATIONSHIPS (NEED FOR ACCEPTANCE)

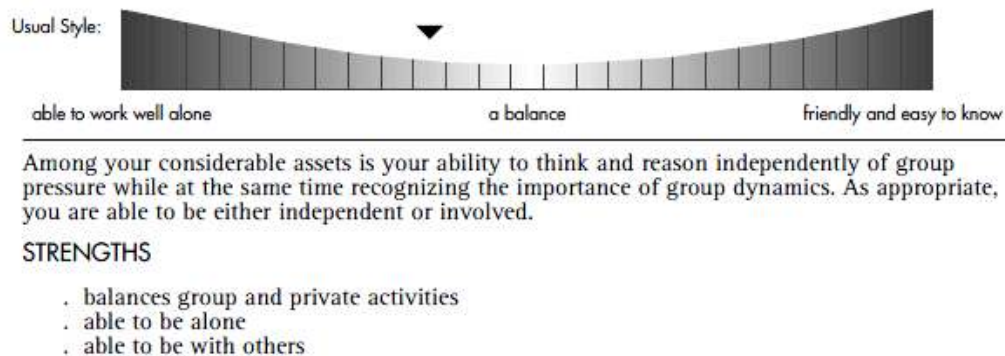


Figure 11: Example of 'Need for Acceptance' measurement from The Birkman Method®

### The Lumina Spark Model – two non-judgmental measures displayed back to back

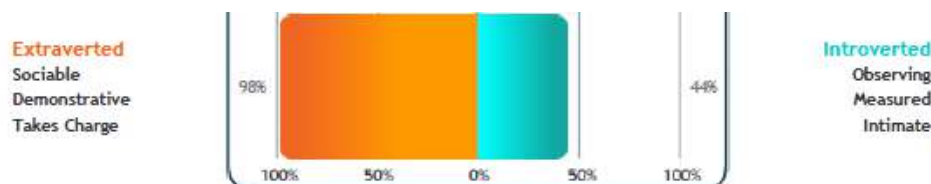


Figure 12: Independent scoring of opposite scales

The “both / and” approach of Lumina Spark helps learners appreciate:

- they can be different in different contexts
- it can be very positive for one’s development to “embrace the paradox” within, and have high scores at both ends of this polarity.

## Appendices I – Mapping Lumina spark to other models

### OCEAN Big Five mnemonic , The Birkman Method ®, Jungian models and Lumina Spark

| Big Five -<br>OCEAN<br>5 measures      | The Birkman Method®  | Jungian -<br>4 measures                | Lumina Spark -<br>10 measures<br>8 used on mandala  |
|--|--|--|---|
| <u>O</u> pen to Experience<br>O+ to O- | Change Orientation<br>- Change – Focused to Open   | Intuition OR Sensing<br>N or S         | Big Picture Thinker (O+) vs Down-to-Earth (O-)<br>- Radical vs Cautious<br>- Imaginative vs Evidence Based<br>- Conceptual vs Practical |
| <u>C</u> onscientious<br>C+ to C-      | Process Orientation<br>- Structure – Adaptable to Systematic   | Judging OR Perceiving<br>J or P        | Discipline Driven (C+) vs Inspiration Driven (C-)<br>- Reliable vs Spontaneous<br>- Structured vs Flexible<br>- Purposeful vs Adaptable |
| <u>E</u> xtraversion<br>E+ to E-       | Social Orientation<br>- Esteem – Direct to Indirect<br>- Acceptance – Independent to Gregarious                                      | Introversion OR Extraversion<br>I or E | Extraversion (E+) vs Introversion (E-)<br>- Takes charge vs Observing<br>- Expressive vs Measured<br>- Sociable vs Intimate             |
| <u>A</u> greeableness<br>A+ to A-      | Control Orientation<br>- Advantage – Distributed to Localized<br>- Authority – Distributed to Localized                              | Feeling OR Thinking<br>F or T          | People Focussed (A+) vs Outcome Focussed (A-)<br>- Collaborative vs Competitive<br>- Empathetic vs Logical<br>- Accommodating vs Tough  |
| <u>N</u> euroticism<br>N+ to N-        | Emotive Orientation<br>- Empathy – Indifferent to Sensitive<br>- Thought – Decisive to Thorough<br>- Activity – Managed to Energetic | Typically not measured                 | Hot Reactor (N+) vs Cool Reactor(N-)<br>- Volatile vs Calm in crisis<br>- Worrying vs No worries<br>- Pessimistic vs Optimistic         |

Appendix II – OCEAN, The Birkman Method® & Lumina Spark on one mandala

