# Two Languages, One Self: the Interplay of Big Five Traits and Dutch-English Bilingual Expression

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CFBGR03610: Capstone Project

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June 5th, 2024

## Abstract

Research shows that bilinguals express different personalities depending on the language used, however, there is limited understanding of this connection among Dutch-English bilinguals. This study investigates whether this shift in personality, known as cultural frame-shifting, occurs not only in bicultural bilinguals but also in monocultural bilinguals. By examining how personality traits influence language use in monocultural Dutch-English bilinguals, this study utilizes the Linguistic Inquiry and Word Count (LIWC) and the Big Five Inventory. Data from 28 bilinguals were analyzed using Spearman correlation, multivariate regression analysis, and various parametric and non-parametric tests. While some small significant differences were found, the results were not sufficient to conclude that the cultural frame-shifting effect is present in monocultural bilinguals.

This study was accepted for a poster presentation at the TABU conference 2024 in Groningen.

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## 1. Introduction

An individual's choice of words can reveal much about their personality, offering insights into their social status, age, gender, and motives (Pennebaker et al., 2003). Various studies have explored this relationship between language use and personality traits, studying self-narratives (Hirsh & Peterson, 2009), interviews (Fast & Funder, 2008), written assignments and diary entries (Pennebaker & King, 1999), and blogs (Gill et al., 2009; Yarkoni, 2010). But aside from exploring the relationship between personality and language use, research has identified an intriguing third factor that intertwines with both: bilingualism. Over the past years, the percentage of bilinguals has increased, with around 60 to 70 percent of the world's population speaking at least two languages (Cantor-Cutiva et al., 2023). Especially because of today's globalized world, more and more people use a second language (Kouwenhoven & Van Mulken, 2012; Chen, 2014). With this rise in bilingualism, researchers started asking whether bilinguals express different personalities depending on the language they communicate in, which has been proven in various studies (Panayiotou 2004; Ramírez-Esparza et al., 2006; Chen & Bond, 2010; Dylman & Zakrisson, 2023). For example, in Panayiotou's (2004) study, bilinguals responded differently to the two versions of a story depending on the language it was presented in. Other studies have discovered that bilingual individuals' answers to personality surveys are influenced by the language in which they respond to the questionnaire (Ramírez-Esparza et al., 2006; Chen & Bond, 2010; Rezapour & Zanjirani, 2020; Dylman & Zakrisson, 2023).

Despite all these findings, it has been difficult to determine whether mostly language, or rather culture influences this difference in personality expression. It is common for personality psychology researchers, who focus on studying the manifestation of people's personality traits, to concentrate on examining biculturalism within cross-cultural frameworks (Grosjean, 2008), leaving bilingualism, a field extensively explored by linguists, with comparatively less attention in personality psychology research. Grosjean (2014) argues that the observed changes in personality merely reflect a shift in attitudes and behaviors corresponding to changes in situations or contexts, regardless of language use. According to his research, shifts in personality only occur in bicultural bilinguals and not monocultural bilinguals (Grosjean, 1982). Therefore, it seems most important to distinguish between participants who are bicultural versus monocultural as this could influence research outcomes.

Even though it is important to distinguish mono- vs bicultural individuals, there are not many studies that have addressed this distinction specifically, making it unclear whether similar

results can be found in both monocultural and bicultural individuals. Specifically, Ramírez-Esparza et al. (2006) conducted a study using the Big-Five Inventory in English and Spanish to test whether English-Spanish bicultural bilinguals would respond differently to this personality test depending on the language they answered in. They found that bilinguals scored higher on extraversion, agreeableness, and conscientiousness in English than in Spanish, confirming the idea that language activates cultural frame-shifting– that is switching between different cultural frames (e.g. norms and values) depending on the context or situation, to fit the cultural context– amongst bilinguals (Ramírez-Esparza et al., 2006). Another study by Rezapour & Zanjirani (2020) found similar effects in Persian-English bicultural bilingual individuals as language was able to activate cultural frame-shifting for all traits except conscientiousness. Despite these observations, Veltkamp et al (2012) found instances of cultural frame-shifting among late second-language learners, regardless of their cultural background and first language. Dylman and Zakrisson (2023) also found, through distinguishing culture and language in their study, significant results for an effect of language on Extraversion, Conscientiousness, and Agreeableness[1] but not for culture or a two-way interaction.

These opposing findings demonstrate the need for further research on how personality manifests as a factor of language use in monocultural bilinguals.

In this study, my objective is to explore the idea that bilinguals might display varying personalities depending on the language they speak, focusing solely on monocultural bilinguals. Furthermore, I aimed to validate previous research findings that suggest differences in personality traits across languages among another group: Dutch speakers who use English as their second language. I will first provide background information regarding personality traits and language use, review relevant literature, and discuss bilingualism, personality, and cultural frame-shifting while identifying gaps in the current research. After establishing the theoretical framework, the methodology section will elaborate on the research design, participant selection, as well as the use of tools such as the LIWC and the Big Five Inventory, followed by a thorough explanation of the statistical analysis procedure. Subsequently, the results section provides an overview of the descriptive statistics and highlights the outcomes derived from the correlation and multivariate regression analysis as well as the ANOVA and Friedman tests. The discussion section analyzes the findings and contextualizes them within existing literature. Lastly, limitations and suggestions for future research will be discussed in the designated section.

[1] See literature review for a description on the Big Five traits

## 2. Literature review

### 2.1 Personality psychology and the five-factor model

There has been an increasing number of studies that looked into people's personality traits in combination with other variables ranging from studies on good grades (Richardson et al., 2012) and leadership effectiveness (Silverthorne, 2001) to studies on alcohol consumption ((Raynor & Levine, 2009; Mezquita et al., 2015) and risky sexual behaviors (Cooper et al., 2000; Trobst et al., 2002), often using the five-factor model as the trait taxonomy.

The five-factor model, commonly known as the Big Five, stands out as the most popular taxonomy for personality traits, having gained widespread attention and support from personality psychologists (Larsen et al., 2020). The primary traits comprising the Big Five model have been labeled 1) Extraversion, 2) Agreeableness, 3) Conscientiousness, 4) Neuroticism, and 5) Openness (see Table 1 for a detailed description of these traits). Over the past years, an incredible amount of studies have delved into the empirical associations of each of the five factors. Before delving into their connection with language use, it's essential to grasp the essence of these traits. Therefore, I will first outline the five traits as defined by Larsen et al. (2020).

Extraversion refers to how much people enjoy social attention, and engage in social interaction. People who score high on this dimension tend to be happier, more cooperative, and more involved in their work. However, extraverts have also been proven to drive faster, experiencing more car accidents.

Agreeableness refers to how much people value harmonious social interaction and cooperation. People high on agreeableness tend to be more conflict-avoidant, empathic, and prosocial and will favor negotiation to resolve conflict. On the other hand, people low on agreeableness tend to assert their power to resolve social conflicts and be more aggressive in general.

Conscientiousness refers to how industrious, reliable, and organized people are. People high on conscientiousness tend to delay gratification, set high standards for themselves, plan well, and work hard for their long-term goals. Scoring high on conscientiousness also predicts greater job satisfaction and social relationships. Conversely, individuals scoring low on conscientiousness are more prone to underperforming in academic or professional settings.

Neuroticism describes how people cope with stress and challenging situations. People high on neuroticism tend to get more upset when faced with difficult situations and are considered less emotionally stable. Additionally, those high on neuroticism report poorer

physical health, are more likely to engage in health-impairing behaviors and report more sexual anxiety in their romantic relationships.

Lastly, Openness refers to how creative and open people are to experiences. People high on openness tend to be more imaginative and intellectual, whereas people low on this dimension are for example more likely to hold negative racial stereotypes and are less creative overall (Larsen et al., 2020). Many personality psychologists strongly endorse the five-factor model, which continues to be utilized in diverse research methodologies and practical applications, including the present study.

**Table 1: The Big-Five and their correlated trait adjectives**

| **Big-Five dimensions** | **Facets and correlated trait adjectives** |
|---|---|
| Extraversion vs introversion | Gregariousness (sociable)<br>Assertiveness (forceful)<br>Activity (energetic)<br>Excitement-seeking (adventurous)<br>Positive emotions (enthusiastic)<br>Warmth (outgoing) |
| Agreeableness vs. antagonism | Trust (forgiving)<br>Straightforwardness (not demanding)<br>Altruism (warm)<br>Compliance (not stubborn)<br>Modesty (not show-off)<br>Tender-mindedness (sympathetic) |
| Conscientiousness vs. lack of direction | Competence (efficient)<br>Order (organized)<br>Dutifulness (not careless)<br>Achievement striving (thorough)<br>Self-discipline (not lazy)<br>Deliberation (not impulsive) |
| Neuroticism vs. emotional stability | Anxiety (tense)<br>Angry hostility (irritable)<br>Depression (not contented)<br>Self-consciousness (shy)<br>Impulsiveness (moody)<br>Vulnerability (not self-confident) |
| Openness vs. closedness to experience | Ideas (curious)<br>Fantasy (imaginative)<br>Aesthetics (artistic)<br>Actions (wide interests)<br>Feelings (excitable)<br>Values (unconventional) |

**Note**: This table is adapted from John & Srivastava (1999) showing McCrae & Costa (1992) NEO PI-R Facets.

## 2.2 Personality and Language Use

The relationship between identity and language is undeniable and has been extensively studied over the years. The language we use and our environment play a crucial role in shaping our identity, emphasizing the significance of the language used within our social circles and interactions with others (Alshehri, 2023). Moreover, Dervin (2012) argues that identity is fluid and can be adapted during interactions with other people. When an individual speaks in a different language, they frequently adjust to the cultural expectations, values, and norms associated with that language's speakers (Chen & Bond, 2010).

Various studies have found consistent correlations between personality traits (using the Five-Factor model) and language use. Using various text-analyzing tools such as the Linguistic Inquiry and Word Count program (LIWC; Boyd, Ashokkumar, Seraj & Pennebaker, 2022), researchers have been able to identify correlations between word categories (e.g. positive/negative emotion, anxiety, anger, first/second or third person use) and all Big Five personality traits. For example, Extraversion and Agreeableness were found to be positively correlated with the use of positive emotion words (Pennebaker & King, 1999), positive feelings, and numbers (Yarkoni, 2010). Neuroticism was positively correlated with the use of negative emotion words and negatively correlated with positive emotion word use (Pennebaker & King, 1999). Various other language categories have been found to be correlated with Big Five personality traits. The use of first-person words (e.g. I, me, mine) and affect, for example, were negatively correlated with Openness. First-person singulars were also more frequently used by individuals who scored higher on Neuroticism (Yarkoni, 2010; Pennebaker & King, 1999). Agreeableness and Conscientiousness were positively correlated with optimism, and negatively correlated with anger (Yarkoni, 2010).

## 2.3 Bilingualism in the Netherlands

Bilingualism, as defined by Weinreich (1968) and Mackey (1962), is the alternate use of two (or more) languages. This definition thus includes all people who live with two or more languages, ranging from the migrant workers who communicate in the language of their host country without necessarily being literate in it, to professional interpreters who demonstrate complete fluency in two languages (Grosjean, 2015). Similarly, many people are bilingual without being bicultural, such as foreign language learners or citizens of countries with different school languages, etc. (Grosjean, 2014). In the Netherlands, more specifically, 48,5% of university students receive their education in both English and Dutch, whilst 14,3% indicate that they

receive their education in English only. Additionally, it was estimated that 5,1% of the Dutch population uses Dutch and English combined, and the use of English is still increasing (Rys, 2021). According to the European Union, approximately 90% of Dutch citizens are likely to speak English as a foreign language. Among them, roughly 56% have indicated that they possess sufficient understanding to engage with English-language media, such as news, television, and radio. This places the Netherlands among the top five countries in the EU in terms of English proficiency (Publications Office of the European Union, 2012). Despite the substantial number of English speakers in the Netherlands, research on Dutch-English bilingualism, particularly in relation to personality and word use, has been notably scarce. To my knowledge, only one study has explored this effect. This study by Kouwenhoven & Van Mulken (2012) involved a sample of university students who were primed through narrative production in both their first (L1) and second (L2) languages and then completed a questionnaire addressing personality, self-confidence, and identification. They discovered that variables related to agreeableness, conscientiousness, and extraversion led to significant differences among participants when using L1 compared to L2.

While precise data on the number of monocultural bilinguals remains elusive, the growing trend of using multiple languages for various reasons highlights the relevance of studying not only bicultural bilinguals but also monocultural bilinguals in terms of personality traits.

### 2.4 Bilingualism, Personality, and Culture

According to Grosjean (2015), many bilinguals report they experience a change in attitudes and behaviors whenever they switch languages. The study results demonstrated that some bilinguals report being more aggressive and tense in one language, whilst being more reserved and gentle in the other for example. This idea has been a popular take in research, resulting in many studies about bilingualism and personality traits. For example, studies have found that people express stronger emotional responses in their first language compared to their second language (e.g. Colbeck & Bowers, 2012; Dewaele, 2008), which could be connected to a possible switch in personality affected by language context (Dylman & Bjärtå, 2018). Other studies found that the use of another language can influence moral dilemmas (Costa et al., 2014) as well as emotional distance (Ivaz et al., 2016). However, Grosjean (1982) argued that this shift in attitudes and behaviors could only occur in bicultural bilinguals and not monocultural bilinguals. According to him, the observed dual or split personality is a result of a

shift in situation or context and is independent of language. Complementing the argument by Ervin (1964), who argued that people are expected to behave according to the cultural context they are in, including the different social roles and emotional attitudes that come with it. Therefore, the main argument here is that different contexts can trigger different attitudes and behaviors which can be seen as a personality change due to language, while it is, in fact, independent of the language used. Building upon Grosjean's argument, research has mostly focused on bicultural bilinguals to investigate this so-called double or split personality (e.g. Panayiotou 2004; Ramirez-Esparza et al., 2006). Therefore, the question of whether this effect indeed only occurs in bicultural bilinguals has lacked investigation in current studies.

Despite this lack of research, one study explicitly found that such effects might be present in monocultural bilinguals. Veltkamp et al (2012) found significant results demonstrating that this personality shift also occurs in second-language learners, independent of their first language or cultural background. In their study, participants were asked to fill in the NEO–Five-Factor Personality Inventory in both Spanish and German. When taking the test in Spanish, participants scored significantly higher for the domains of Neuroticism and Extraversion, and significantly lower for Agreeability, relative to the German test. This implies that when acquiring a second language, individuals naturally adopt new "cultural frames" that influence this additional personality they develop (Veltkamp et al., 2012). Another study by Dylman and Zakrisson (2023) also emphasized the importance of separating language and culture to determine whether both influence cultural frame-shifting in Swedish-English monocultural bilinguals (L1 Swedish speakers with LX English, taught in Sweden). By measuring both factors independently through the Big-Five questionnaire, they found significant results for an effect of language on Extraversion, Conscientiousness, and Agreeableness but not for culture or a two-way interaction. Neuroticism was the only trait where there was no primary effect of language, but it did show significance for culture (Dylman & Zakrisson, 2023). These results on monocultural bilinguals imply that language plays a significant role in shaping personality expression, suggesting that cultural background may not be a decisive factor in this observed shift in personality.

## 3. Methodology

The predominant method for conducting personality research using language measures, involves establishing statistical associations between quantified language usage and other indicators of personality (e.g. self-report measures such as the Big Five Inventory) (Caplan et al., 2020). In this study, a similar approach is used to discover the relationship between personality traits and language use in monocultural bilingual individuals. Using a method similar to that of McAdams et al. (2004), this research will center on collecting language samples from narratives, as well as both high and low points in life. These samples will be analyzed for various indicators such as affect, tone, and cognition, utilizing measurement points from the LIWC[2]. Furthermore, these linguistic features will be correlated with self-reported Big Five personality traits to address the question of whether there is a significant relationship between personality and language use amongst Dutch-English monocultural bilinguals, and whether this differs depending on L1 and L2 use.

### 3.1 Participants

A total of 28 bilingual participants (18 women and 10 men) partook in this study, completing the online survey in Qualtrics (Qualtrics, Provo, UT). Participants were recruited through convenience sampling as well as social media platforms (e.g. Instagram, LinkedIn), and the university newsletter. For ethical purposes, participants were informed at the beginning of the survey about the topic of this study to ensure that they were fully informed.
18 participants were between 18-25 (57%), 4 between 25-40 (14%), and 8 between 40-65 (29%). All participants considered themselves fluent in Dutch (L1) and English (L2). They were predominantly monocultural, having grown up in the Netherlands and being largely influenced by Dutch/Frisian culture. Overall, they rated their English proficiency (reading, writing, listening, and speaking) as 86.8 on a 100-point scale (see Table 2).

[2] See methods for an overview on the LIWC

**Table 2**

Means and standard deviations for the Dutch and English proficiency measures (1-100 range)

| | **Dutch Mean (SD)** | **English Mean (SD)** |
|---|---|---|
| **Reading** | 97.9 (4.55) | 89.5 (10.06) |
| **Writing** | 93 (10.45) | 83.6 (13.25) |
| **Listening** | 97.7 (6.12) | 90.0 (10.28) |
| **Speaking** | 97.9 (4.97) | 84.1 (13.51) |
| **Mean*** | 96.6 | 86.8 |

*Mean of all four categories (reading, writing, listening and speaking) for both languages

## 3.2 Materials and Methods

*3.2.1. Linguistic Inquiry and Word Count (LIWC; Boyd, Ashokkumar, Seraj & Pennebaker, 2022)*

All written materials from the participants were individually analyzed using the LIWC. The LIWC was initially created to identify features of linguistic expression associated with negative life experiences and health. Nowadays, it can classify words into numerous categories, including social processes, cognition, tone, and negative and positive emotions, and has been extensively used to track language use in personal narratives. The LIWC-22 uses a word count strategy whereby it uses a dictionary of over 2300 words to search for words and word stems within a given text. These dimensions encompass standard language categories (e.g. articles, prepositions, and pronouns), psychological processes (e.g. positive and negative emotion, cognition), relativity-related words (e.g. time, tense, motion), and traditional content dimensions (e.g. sex, home, occupation) (Pennebaker et al., 2003). The LIWC-22 also contains four summary measures: Analytical Thinking, Clout, Authenticity, and Emotional Tone. Analytical thinking measures the extent to which individuals use words indicative of formal, logical, and hierarchical thinking patterns. Clout indicates the relative social status, confidence, or leadership conveyed through one's writing or speech. Authenticity reflects how genuine or honest people are in their communication, without self-regulation or filtering. Lastly, emotional tone includes both positive and negative dimensions, with a score below 50 indicating a more negative tone in the text (Pennebaker Conglomerates, Inc., 2024). For this study, I have selected 8 language scores to look at, based on the amount of data provided by the analysis and suggested scores

based on the literature review. The selected language scores and their meaning can be found in Table 3.

**Table 3**

Selected language scores from the LIWC-22 and examples of words per category/description.

| Language score | Description/Most frequently used exemplars | Additional explanation |
|---|---|---|
| Analytic (Analytical thinking) | Metric of logical, formal thinking | High Analytic score indicates that the text is structured in a logical, formal, and analytical manner, often with complex and abstract language. Conversely, a low Analytic score suggests a more narrative, personal, and informal style of writing, typically with simpler language and more personal pronouns. |
| Clout | Language of leadership, status | High Clout score indicates that the text reflects confidence, leadership, and authority, often using more assertive language and fewer self-references. A low Clout score suggests a more tentative, humble, or deferential tone, with language that may reflect uncertainty or lower status. |
| Tone | Degree of positive (negative) tone | High Tone score in LIWC-22 indicates that the text has a positive emotional tone, with a higher occurrence of words that convey positive feelings and attitudes. |
| Ppron (Personal pronouns) | I, you, my, me | High ppron score suggests a high percentage of personal pronouns used |
| Drives | we, our, work, us | High drives score suggests a high percentage of words related to psychological or motivational states like achievement and power. |
| Cognition | is, was, but, are | High cognition score suggests a high percentage of words related to cognitive processes and functions such as “insight” or “tentativeness” |
| Affect | good, well, new, love | High affect score suggests a high percentage of words related to emotional expression or states such as “anxiety” or “anger” |
| Social | you, we, he, she | High social score suggests a high percentage of words related to social interactions and behavior such as “politeness”, “interpersonal conflict” as well as “family” and “friends”. |

**Note:** These definitions were adapted from Boyd et al. (2022)

*3.2.2. Big Five Inventory (John & Srivastava, 1999)*

The Big-Five Inventory (BFI; John & Srivastava, 1999) is a self-report inventory designed to measure individuals on the Big Five Factors of personality; Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. The BFI is a brief inventory that allows “efficient and flexible” evaluation of the five dimensions across individuals, suitable for situations where detailed measurement of specific facets is not needed (John et al., 1999). This study uses the Dutch version which contains 60 items with a 5-point Likert scale ranging from 1 (disagree strongly) to 5 (agree strongly). See the appendix for an extensive overview of the Dutch Big-Five Inventory used in this study.

## 3.3 Design

Participants filled out the online survey in Qualtrics that consisted of several parts. First, they were asked to sign a consent form, answer several demographic questions, and rate their fluency in English for reading, listening, speaking, and writing on a scale from 1-100. Then, the participants continued to the rest of the questionnaire, consisting of 3 parts. The first part included questions to measure participants’ personality traits using the Big Five Inventory as described earlier. In the second part, participants were asked to write two short stories based on the pictures that were presented to them. The picture storybooks by Heaton (1966, 1975), which were used in this study, are also used regularly in bilingual studies (e.g. Kormos & Trebits, 2012). The pictures generally have an element of surprise in them and are designed in such a way that participants have to think about the motivation of the characters in the story (De Jong & Vercellotti, 2016). In this study, participants had to write one narrative in English, and the other one in Dutch. The two pictures both consisted of 4 successive smaller pictures, creating a scenario. Participants were asked to write down a minimum of 10 sentences with a beginning, middle, and ending based on the image presented to them. In the third and last part, participants had to answer a total of 4 questions about daily life. 2 had to be answered in English and the other two in Dutch. For both languages, one question focused more on low points in life, while the other focused more on high points. The two questions regarding high points were: “What daily habits or strategies help you stay productive?” (English), and “How do you normally relax after a busy day?” (Translated from Dutch). The two low point questions were: “What are some of the biggest sources of stress or frustration for you on a typical day, and how do you try to deal with them?” (English), and “How do you usually deal with sudden challenges or setbacks?” (Translated from Dutch).

For all assignments, descriptions were given in the language the participants had to answer.[3]

### 3.4 Statistical analysis

After the data collection through Qualtrics, the data was prepared for the language analysis done by the LIWC. The texts written by participants were separately analyzed, creating a total of 6 different categories per language variable (e.g. ppron, cognition, analytic): Dutch Text, English text, Dutch low point, English low point, Dutch high point, and English high point. Statistical analyses were performed using R. Variables were tested for normality, and a series of bivariate analyses was conducted for the two separate datasets: Dutch and English, using Spearman's correlation coefficient (see Graphs 1-4). The literature review as well as these correlations provided a basis for the data analysis, on the base of which I could make a selection of interesting traits and language scores to look at. The selected language scores and their corresponding traits can be found in Table 3. Statistical significance was set at $p < 0.05$. I decided to exclude high and low points from the rest of the analysis due to very low scores, making them insufficient to do any statistical analysis with. The rest of the analysis focussed on the (neutral) picture descriptions provided by the participants.

The first multivariate regression analysis was performed on all the language scores from both languages combined (Dutch and English) to examine the overall relationship between language use and personality traits (see Table 4). Given the importance of the distinction between L1 and L2 use in this study, separate multivariate regression analyses were also performed on the Dutch and English datasets to test for interlingual differences (see Tables 5 and 6). These analyses included the 7 selected language scores, and the Big Five personality traits categorized by levels whereas the scores, ranging from 1-5, were categorized into 3 categories: low = < 1.5; mid = 1.5-3.5; high = > 3.5. In this study, I categorized personality traits into levels (low, mid, high) instead of using continuous variables to better capture how distinct personality levels influence language use. For the multivariate regression analysis, however, I also ran the analysis using personality traits as continuous variables. The *drive* score was excluded from further analysis due to low variance and a predominance of zero values. Then, ANOVA and Kruskal-Wallis tests were conducted to analyze how the language of writing (Dutch vs. English) affects different aspects of language use (Analysis 1) and to examine how varying levels of personality traits influence language use (Analysis 2). Lastly, to account for multiple comparisons, I applied the Bonferroni correction method to adjust all p-values.

[3] See appendix for an overview of the entire questionnaire

# 4. Results

## 4.1 Correlations and Regression Analysis

Descriptive statistics for all reported variables are presented in Table 3. Overall, participants scored highest on Agreeableness (mean = 3.960) and lowest on Neuroticism (mean = 2.839). The correlations between personality traits and language scores were tested to determine the strength and direction of the relationships between personality traits and language scores in Dutch-English bilinguals. Spearman's correlation coefficient was calculated due to certain variables not being normally distributed. The correlations between selected LIWC categories and the personality traits are presented in Graphs 1-4. For the Dutch text, Extraversion and *affect* showed a moderate negative correlation (ρ= -0.51), whereas Neuroticism and *affect* exhibited a contrasting effect, demonstrating a notable positive correlation (ρ= 0.62). Neuroticism and *social* showed a moderate positive correlation (ρ=0.46). For the English text, a moderate positive correlation was observed between Neuroticism and *social* (ρ=0.49), while Conscientiousness and Agreeableness exhibited moderate negative correlations with this language score (ρ= -0.44 and ρ= -0.41, respectively). Additionally, Agreeableness showed a negative correlation with *ppron* (ρ= -0.43). Other variables showed weaker correlations.

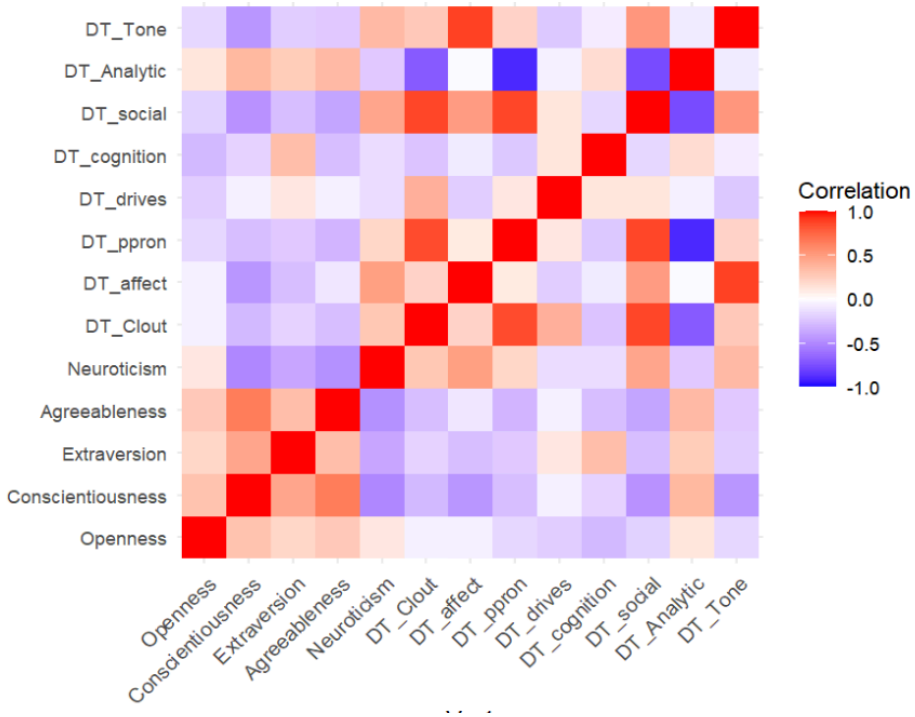
Regarding the high points and low points for Dutch and English, only the English dataset showed moderate correlations with several language scores. Openness and *social* (high point) were negatively correlated (ρ= -0.41). Neuroticism and *affect* (high point; ρ= -0.43) demonstrated a moderate negative correlation. Extraversion was moderately correlated with *cognition* (low point; (ρ=-0.50) and *drives* (high point; ρ=-0.43).

**Table 3**
Descriptive statistics of all reported variables.

| | **Minimum** | **Maximum** | **Mean** | **Std. deviation** |
|---|---|---|---|---|
| ***Traits*** | | | | |
| Extraversion | 2.250 | 4.750 | 3.691 | 0.66 |
| Agreeableness | 3.167 | 4.917 | 3.960 | 0.47 |
| Openness | 2.580 | 5.000 | 3.843 | 0.59 |
| Conscientiousness | 2.667 | 4.917 | 3.553 | 0.61 |
| Neuroticism | 1.083 | 4.500 | 2.839 | 0.99 |
| ***LIWC categories Dutch*** | | | | |
| Clout | 44.88 | 98.27 | 75.06 | 14.99 |
| Affect | 0.00 | 4.81 | 2.15 | 1.49 |
| ppron | 0.00 | 13.73 | 4.65 | 3.29 |
| drives | 0.00 | 7.37 | 1.05 | 2.01 |
| cognition | 0.00 | 1.23 | 0.21 | 0.38 |
| social | 0.00 | 15.79 | 7.17 | 3.85 |
| Tone | 20.23 | 78.85 | 51.13 | 17.10 |
| Analytic | 40.88 | 92.50 | 77.76 | 11.76 |
| ***LIWC categories English*** | | | | |
| Clout | 18.24 | 94.65 | 68.12 | 19.07 |
| Affect | 0.00 | 10.31 | 4.55 | 2.48 |
| ppron | 0.00 | 11.44 | 5.49 | 3 |
| drives | 0.00 | 9.52 | 2.03 | 2.24 |
| cognition | 4.60 | 20.62 | 9.84 | 3.64 |
| social | 4.82 | 18.91 | 10.89 | 3.59 |
| Tone | 1.00 | 99.00 | 46.12 | 25.55 |
| Analytic | 35.69 | 99.00 | 83.88 | 17.42 |

**Graph 1**

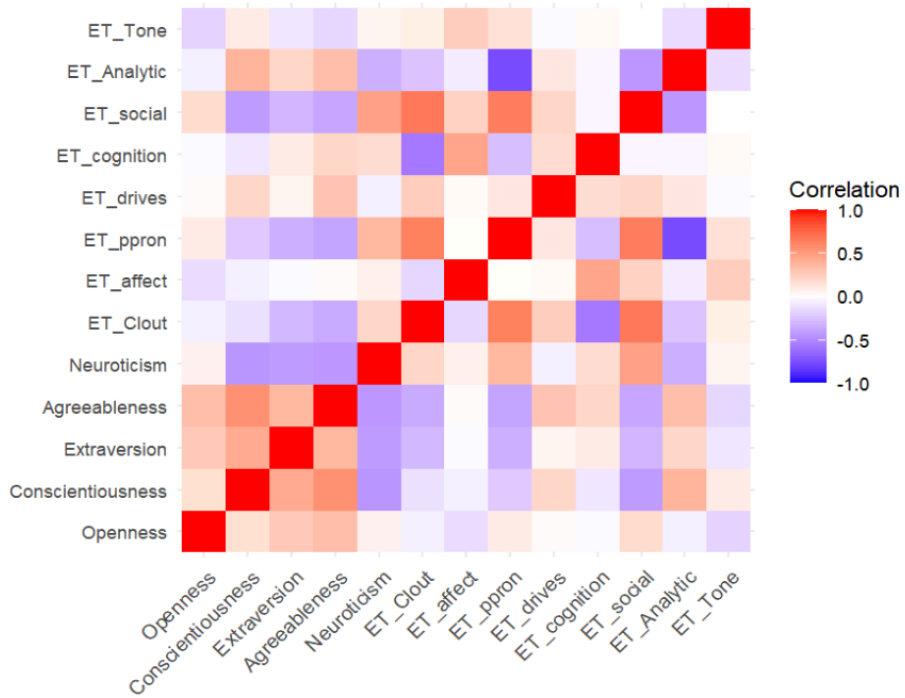
Correlation matrix – Dutch text language scores and Big Five traits




**Note:** DT = Dutch text, and refers to the picture description given in Dutch. Therefore e.g. DT_Analytic means the analytic language score of the picture description written in Dutch.

**Graph 2**

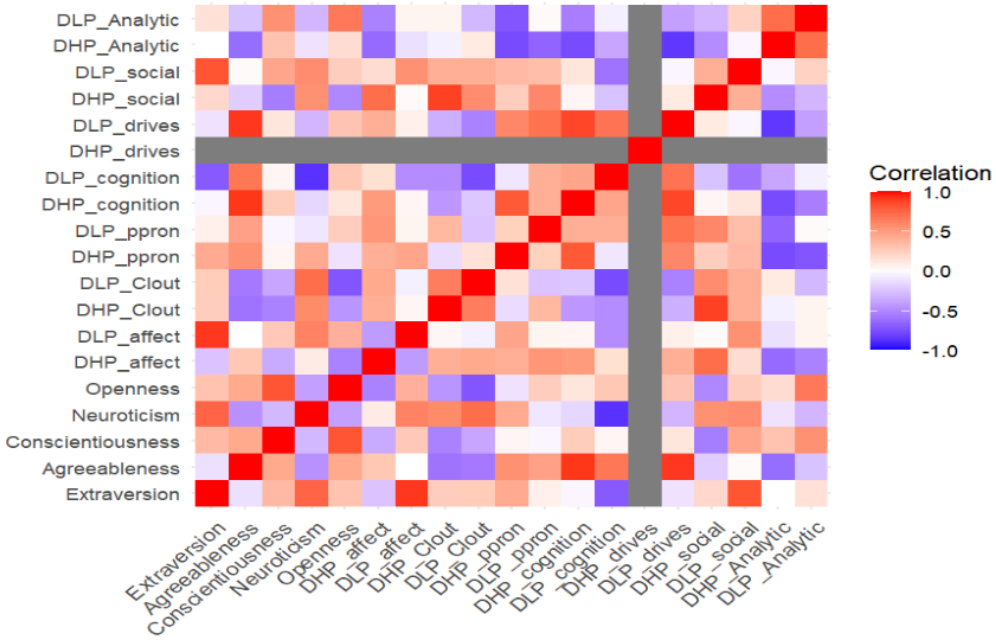
Correlation matrix – English text language scores and Big Five traits




**Note:** ET = English text, and refers to the picture description given in English. Therefore e.g. ET_Analytic means the analytic language score of the picture description written in English.

**Graph 3**

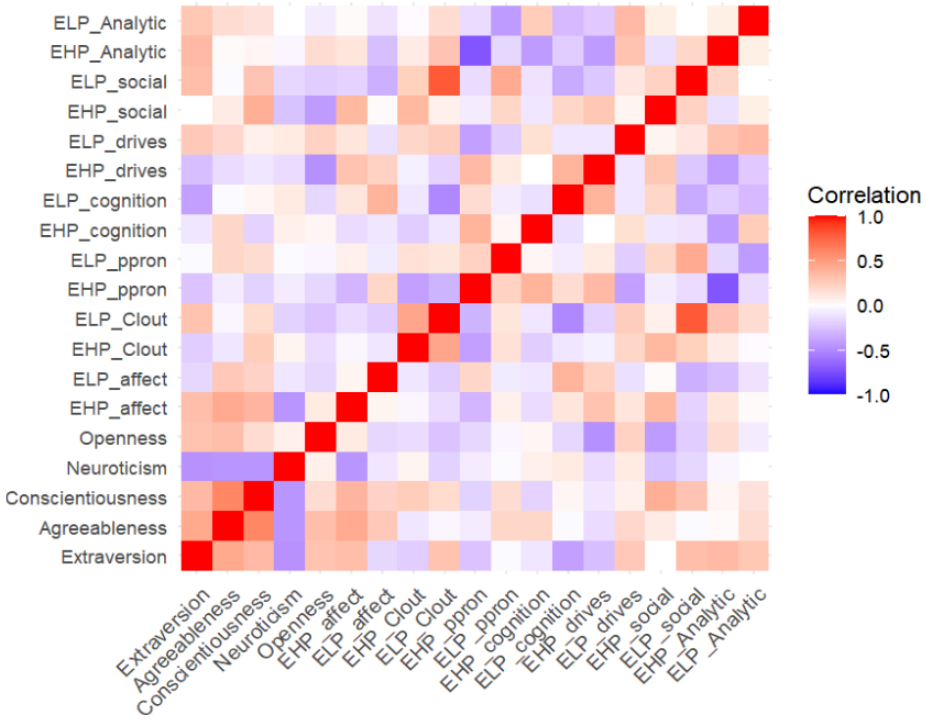
Correlation matrix – Dutch low and high point language scores and Big Five traits




**Note:** DHP = Dutch high point, and DLP = Dutch low point, thus these are the language scores for the 2 questions (high and low point) asked in Dutch

**Graph 4**

Correlation matrix – English low and high point language scores and Big Five traits




**Note:** EHP = English high point, and ELP = English low point, thus these are the language scores for the 2 questions (high and low point) asked in English

Multivariate linear regression was used to test if personality traits significantly predicted language use. More specifically, the analysis was performed on all 7 language scores (Analytic, Clout, Tone, ppron, cognition, affect, and social) together with all 5 traits as predictors to assess whether we predict language scores (dependent variable) based on the levels of Openness, Agreeableness, Conscientiousness, Extraversion, and Neuroticism (independent variables). Tables 4,5 and 6 contain all the p-values from the multivariate regression analyses. Variance inflation factor (VIF) analysis was conducted to test for possible multicollinearity. Based on these GVIF values, multicollinearity is relatively low, as the square root of the GVIF values is close to 1. Significance was found for *Clout* and Agreeableness level mid ($p = 0.04$), however, the F-statistic is 1.639 with a p-value of 0.1585, and Adjusted $R^2 = 0.07$ indicating that the model as a whole is not statistically significant at conventional levels. No significance was found for the other variables. Multivariate regression analysis was also performed on the Dutch and English datasets separately to account for differences across languages. For both datasets individually, no significance was found between the Big Five traits and language scores per language (see tables 5 and 6).

**Table 4**

Multivariate regression analysis – p-values for personality traits and language scores for both languages

| | **Openness (level = mid)** | **Conscientiousness (level = mid)** | **Extraversion (level = mid)** | **Agreeableness (level = mid)** | **Neuroticism (level = mid)** | **Neuroticism (level = low)** |
|---|---|---|---|---|---|---|
| **Cognition** | 0.92 | 0.86 | 0.55 | 0.78 | 0.50 | 0.96 |
| **Social** | 0.21 | 0.97 | 0.57 | 0.08 | 0.58 | 0.71 |
| **Clout** | 0.54 | 0.94 | 0.59 | 0.04* | 0.92 | 0.40 |
| **Tone** | 0.94 | 0.84 | 0.74 | 0.85 | 1.00 | 0.33 |
| **Affect** | 0.76 | 0.77 | 0.32 | 0.96 | 0.43 | 0.70 |
| **Analytic** | 0.42 | 0.08 | 0.38 | 0.91 | 0.38 | 0.64 |
| **ppron** | 0.32 | 0.86 | 0.42 | 0.12 | 1.00 | 0.41 |

**Note**: p-values < 0.05 (*) indicate statistical significance

**Table 5**
Multivariate regression analysis – p-values for personality traits and language scores for Dutch text only

| | **Openness (level = mid)** | **Conscientiousness (level = mid)** | **Extraversion (level = mid)** | **Agreeableness (level = mid)** | **Neuroticism (level = mid)** | **Neuroticism (level = low)** |
|---|---|---|---|---|---|---|
| **Cognition** | 0.21 | 0.97 | 0.47 | 0.75 | 0.71 | 0.97 |
| **Social** | 0.87 | 0.71 | 0.95 | 0.27 | 0.44 | 0.71 |
| **Clout** | 0.83 | 0.27 | 0.42 | 0.14 | 0.85 | 0.52 |
| **Tone** | 0.45 | 0.40 | 0.64 | 0.72 | 0.61 | 0.81 |
| **Affect** | 0.75 | 0.99 | 0.39 | 0.82 | 0.46 | 0.43 |
| **Analytic** | 0.30 | 0.19 | 0.58 | 0.44 | 0.74 | 0.79 |
| **ppron** | 0.45 | 0.73 | 0.76 | 0.26 | 0.72 | 0.62 |

**Table 6**
Multivariate regression analysis – p-values for personality traits and language scores for English text only

| | **Openness (level = mid)** | **Conscientiousness (level = mid)** | **Extraversion (level = mid)** | **Agreeableness (level = mid)** | **Neuroticism (level = mid)** | **Neuroticism (level = low)** |
|---|---|---|---|---|---|---|
| **Cognition** | 0.93 | 0.70 | 0.23 | 0.51 | 0.89 | 0.15 |
| **Social** | 0.06 | 0.72 | 0.38 | 0.10 | 0.80 | 0.62 |
| **Clout** | 0.55 | 0.38 | 0.23 | 0.12 | 0.55 | 0.88 |
| **Tone** | 0.61 | 0.54 | 0.61 | 0.90 | 0.85 | 0.35 |
| **Affect** | 0.57 | 0.70 | 0.44 | 0.94 | 0.96 | 0.58 |
| **Analytic** | 0.80 | 0.26 | 0.50 | 0.71 | 0.47 | 0.25 |
| **ppron** | 0.58 | 0.55 | 0.43 | 0.35 | 0.45 | 0.60 |

Lastly, a multivariate regression analysis was run on all 7 language scores and the 5 traits as continuous variables to examine the potential linear relationships between the two variables, but this did not result in any significant outcomes.

## 4.2 ANOVA, Friedman, and Kruskal-Wallis tests

ANOVA, Friedman, and Kruskal-Wallis tests were used to test Analysis 1: How the language of writing (Dutch vs. English) affects different aspects of language use, and Analysis 2: How different levels of personality traits affect language use.

To determine whether there are significant differences in the use of language across different texts (written in either Dutch or English), tests were conducted using language as a within-subject factor and the 7 language scores as the dependent variables. 4 out of the 7 language scores did not follow a normal distribution, prompting the use of the Friedman test for those measures. For the remaining three scores, I conducted an ANOVA test. For *Analytic* (p= 0.049*), *affect* (p= 0.0003***), and *social* (p= 0.0005), significance was found in the first analysis (see Tables 7 and 8).

**Table 7**
Friedman test results for Analysis 1

| | **Language** |
|---|---|
| **Analytic** | 0.049* |
| **Clout** | 0.071 |
| **cognition** | 0.18 |
| **affect** | 0.0003*** |

**Table 8**
ANOVA test results for Analysis 1

| | **Language** |
|---|---|
| **Tone** | 0.43 |
| **ppron** | 0.33 |
| **social** | 0.0005*** |

**Note**: p-values < 0.05 (*), p-values < 0.01 (**) and p-values < 0.001(***) indicate statistical significance

For the second analysis, tests were conducted on personality traits with their corresponding levels (low, mid, high) and language scores to determine if there are significant differences in language use based on different levels of personality traits. ANOVA and Kruskal-Wallis tests were used according to the distribution of the variables. Each participant provided a single score for each of the five personality traits, resulting in independent samples for each trait level. Therefore, the Kruskal-Wallis test was chosen as the appropriate non-parametric test for comparing the medians of multiple independent groups. Conscientiousness and *Clout* (p = 0.03), along with social (p = 0.03), demonstrated statistical significance. In the case of Agreeableness, *Clout* (p = 0.002), *personal pronouns* (p = 0.002), and *social* (p = 0.0004) exhibited notable significance. However, no significant results were observed for Openness, Extraversion, and Neuroticism following these analyses (see table 9).

**Table 9**
Kruskal-Wallis and ANOVA test results for Analysis 2

| | Openness | Conscientiousness | Extraversion | Agreeableness | Neuroticism |
|---|---|---|---|---|---|
| **Analytic** | 0.16 | 0.16 | 0.89 | 0.54 | 0.27 |
| **Clout** | 0.95 | 0.03* | 0.36 | 0.002** | 0.28 |
| **cognition** | 0.98 | 0.95 | 0.63 | 0.94 | 0.83 |
| **affect** | 0.73 | 0.23 | 0.12 | 0.34 | 0.62 |
| **Tone** | 0.98 | 0.50 | 0.41 | 0.58 | 0.31 |
| **ppron** | 0.85 | 0.13 | 0.25 | 0.002** | 0.20 |
| **social** | 0.60 | 0.03* | 0.26 | 0.0004*** | 0.10 |

**Note**: p-values < 0.05 (*), p-values < 0.01 (**) and p-values < 0.001(***) indicate statistical significance

## 4.3 Multiple Comparisons Correction

To address the issue of multiple comparisons, p-values were adjusted using the Bonferroni method. I ran the test two separate times: once for all the p-values from the multivariate regression analysis, and once for the ANOVA, Kruskal-Wallis and Friedman tests. For the multivariate regression analysis, the adjustment resulted in all p-values being adjusted to 1, indicating that none of the observed differences reached statistical significance after correction for multiple comparisons. However, for the (non-)parametric tests in Analysis 2, 3 p-values remained significant after correction. Specifically, the p-value for the association between *affect* and language increased from 0.0003 to 0.013, the association between *social* and language increased from 0.0005 to 0.021, and the relationship between Agreeableness and *social* increased from 0.0004 to 0.017.

## 5. Discussion

This study aimed to uncover the differences in personality in language use, depending on L1 or L2 in monocultural Dutch-English bilinguals. Moderate correlations were revealed between language use and personality traits in Dutch and English texts. In the Dutch narratives, I observed a moderate negative correlation between Extraversion and *affect*, indicating that individuals who scored lower on Extraversion tended to exhibit more pronounced affective language expression. Conversely, a notable positive correlation was found between Neuroticism and *affect* in Dutch texts, suggesting that individuals higher in Neuroticism tended to express more emotional language features. Similarly, in the English narratives, I identified a moderate positive correlation between Neuroticism and *social* language use, implying that individuals with higher Neuroticism scores tended to use more social language expressions. On the other hand, both Agreeableness and Conscientiousness demonstrated moderate negative correlations with *social* language use in English texts. This suggests that individuals scoring higher on Agreeableness and Conscientiousness were inclined to use fewer social language expressions compared to those with higher Neuroticism scores. These findings are opposite to what McAdams et al. (2004) found, as this study discovered positive correlations between *social* and Agreeableness as well as Conscientiousness in English written narratives, whereas Neuroticism was mostly negatively correlated with social language scores.

Multivariate regression analysis was performed to be able to assess whether personality traits predict language use, which was measured by the different language categories from the LIWC. The findings suggest that even though certain personality traits show significant associations with specific language traits, the overall predictive power of these traits on language use is limited. For example, the analysis revealed a significant association between Agreeableness at the mid-level and *Clout* ($p = 0.03$), suggesting that individuals scoring moderately on Agreeableness are more likely to express their social status or leadership through their language. However, the model as a whole did not exhibit statistical significance, indicating that personality traits alone may not be strong predictors of language use. Moreover, when testing for Dutch and English datasets separately, no significant associations were found between the Big Five personality traits and language use. This also indicates that there were no observed differences across languages. Importantly, in this study, linear regression analysis was used to explore the relationship between language scores and personality traits. However, it is important to consider whether these relationships are linear or non-linear. Separate visual inspections with scatter plots with LOESS curves revealed deviations from linearity, suggesting

that a more complex relationship might exist. Future research should explore non-linear models to better understand the relationship between personality traits and language use, as this approach may uncover patterns that linear models cannot capture. Overall, the analysis suggests that, although personality traits might have an impact on specific aspects of language use, we cannot conclude that personality predicts language use, especially considering the absence of distinct differences between the two languages in this study.

ANOVA, Friedman, and Kruskal-Wallis tests were used to investigate two key analyses: Analysis 1 focused on how the language of writing influences language scores, while Analysis 2 explored the impact of different levels of personality traits on language scores.

Reflecting on the significant effects of language (Dutch or English), the results revealed notable differences in language use across texts written in Dutch and English. Statistical significance was observed for *Analytic* (p= 0.049*), *Affect* (p= 0.0003***), and *Social* (p= 0.0005) indicating that choice of language significantly influenced the language scores in this study. Note that it is important to consider the differences in English vs Dutch data obtained from the questionnaire, which will be addressed in the limitations section.

Moving to Analysis 2, the exploration of the impact of different levels of personality traits on language use revealed interesting insights. Statistical significance was observed for Conscientiousness and *Clout* (p = 0.03), along with *Social* (p = 0.03), as well as for Agreeableness and *Clout* (p = 0.002), *ppron* (p = 0.002), and *Social* (p = 0.0004). These findings do suggest that individual personality differences may shape language use in a way, however, there was no distinction made between L1 and L2 use. Overall, based on these two analyses, I can conclude that while there were significant differences in certain language scores between Dutch and English, these differences were not pervasive across all aspects of language use. For the traits, I found significant results in the second analysis (Conscientiousness and Agreeableness), regardless of the language used. Interestingly, no significant differences were found between languages (L1 vs L2) on language use (Analysis 1) for these 2 traits. Most importantly, after correction for multiple comparisons, only 3 p-values remained significant. Therefore, despite the above-mentioned significant results coming from separate analyses, I cannot reliably conclude that Dutch-English monocultural bilinguals express personality differences across different languages.

Previous research on bilingualism and personality discovered significant differences between L1 and L2 in personality scores (Ramirez-Esparza et al., 2006; Veltkamp, 2012), however, these studies used a different approach showing that bilinguals' personality test scores

were affected by the language used for the test. In this study, the focus was put on narrative writing as researchers have suggested that patterns of word usage within narratives might reveal relationships with personality traits, with self-narratives (the method used for describing high and low points) in particular (Hirsh & Peterson, 2009). Interestingly, Gill et al. (2009) mentioned that in monological writing situations such as narrative writing, as done in this study, people who score high on extraversion use more social words, positive emotion words, references to themselves and others, and express more certainty. Similarly, other researchers found a higher score in the use of negative emotions and articles in people low on Extraversion (Pennebaker & King, 1999). This study, however, found no significant results for Extraversion. McAdams et al (2004) found that Neuroticism, Conscientiousness, and Agreeableness were positively associated with the use of negative tone in life narratives, but these findings were not validated in this study. Conversely, this study found that Agreeableness was positively associated with the overall communion score and the specific communion themes of love/friendship and unity/togetherness, thereby confirming their fourth hypothesis that Agreeableness should be connected to narrative themes of communion. These findings align with my finding that there is a statistically significant difference between Agreeableness and *social*.

Lastly, study results regarding personality traits and language use often differ in strength. Pennebaker and King (1999) discovered limited connections between the language individuals use and their self-reported Big Five personality traits. Pennebaker et al. (2003) also noted that while self-reports of personality are frequently linked with word use, the strengths of these associations are often small. Other studies found stronger results (Fast & Funder, 2008), but this does suggest that the small to no significant results found in this study are not entirely surprising.

The findings of this study also offer valuable insights into the ongoing debate regarding the influence of monocultural and bicultural experiences on personality expression through language use. Grosjean (2010) argues that significant differences in personality expression between individuals speaking different languages are more commonly observed in bicultural individuals who navigate between multiple cultural frameworks. This study, which primarily focuses on monocultural bilingual individuals predominantly influenced by Dutch culture, aligns with Grosjean's idea by demonstrating minimal differences in personality expression across languages. He suggested that significant differences in language use associated with personality traits may not be as visible in monocultural bilingual individuals, despite their

proficiency in two languages. The findings from this study indicate that the interplay between personality traits and language use across different languages, or the so-called cultural frame-shifting effect may indeed be more prominent in bicultural or multicultural individuals who possess a deep understanding of and engagement with multiple cultural contexts.

## 6. Limitations and Future Directions

The non-significant findings in our study hold important implications for understanding the relationship between personality traits and language use. One possible explanation for these results could be the complex and multifaceted nature of both personality and language. It is possible that the influence of personality traits on language use may vary depending on contextual factors, individual differences, or cultural nuances that were not fully captured in our study design. It is difficult to measure the exact extent to which someone is monocultural or bi-/multicultural, as well as fluent in both languages.

Moreover, the size of this study, together with factors such as low variance in certain variables and low word count, may have contributed to these non-significant findings. The relatively small sample size of our study could have limited statistical power, making it challenging to detect subtle relationships between personality traits and language use. Furthermore, the low variability in some language scores (such as drives and cognition) within the dataset most likely hindered the identification of significant associations.

Additionally, limitations in data collection, such as the reliance on self-report measures (e.g. regarding language fluency and low/high points) and the low word count, could have further constrained the discovery of meaningful relationships. Regarding the fluency level of participants, bilingual individuals who are not proficient in their second language may feel constrained in expressing themselves. As fluency was self-rated by participants, this is an uncertainty which could have potentially distorted the manifestation of their personality (Chen, 2014).

Regarding the language aspect of this study, a major limitation is the quantity of text obtained via the questionnaire. The length of the original writing assignments may not have been large enough for stronger personality effects to be reliably observed. In general, the more words the LIWC can analyze, the more reliable the results get. Conversely, texts comprising fewer than 25-50 words are particularly mentioned to be viewed with some skepticism (Pennebaker Conglomerates, Inc., 2024). This was the case for all the answers on high and low points, which led to many NAs, zeros, and a low variance in the dataset in general. Not having enough data on these points resulted in the exclusion of these columns for the rest of the

analysis. Compared to McAdams et al. (2009), who obtained two to three paragraphs per life-story scene by allowing participants 3-6 hours at home to complete their narratives, my study's questionnaire took participants around 25-30 minutes to complete and covered smaller bits of text. Although both studies aimed to separately assess high and low points, the conciseness and insufficient data in my study limited a deeper exploration of these themes. This underscores the need for detailed instructions and sufficient time allocation to ensure richer and more complete narratives. Future studies might benefit from follow-up prompts or interviews to encourage more elaborative responses and enhance data quality.

A last limitation regarding the LIWC that is important to mention is that it was originally developed in English and was updated in 2022, whereas the Dutch version was last revised in 2007 (Boot et al., 2017). Although other factors could have controlled the outcomes of the analysis, it is notable that for the English language scores, there were fewer NAs or zeros. For certain language scores like *drives* and *cognition*, the scores were also higher in English than in Dutch despite the two assignments being similar. According to Boot et al. (2007), the Dutch version of the 2007 LIWC is a reliable measure and can very well be used, but when wanting to compare it to the English 2022 version, this might not be the case.

Finally, Hirsh and Peterson (2009) argue that the nature of the writing task can also influence the magnitude of the observed relationships, whereas writing tasks more clearly linked to self-expression might be more powerfully related to personality traits than other types of writing. In this study, participants were asked to describe pictures based on their interpretation of it, combined with their creativity. This does not necessarily link to self-expression and might have caused less significant results. This study used written narratives based on writing exercises and questions, whereas other studies have for example used online data from participants' social media and blog posts (e.g. Gill et al., 2009; Park et al., 2015). This could offer a more authentic representation of an individual's personality traits and language use in real-life situations, which is something that questionnaires may not be able to do. Accessing data from social media and blogs allows for the collection of more information, facilitating a better analysis of personality and language use daily. Based on the findings of this study and its limitations, future research could benefit from exploring the relationship between personality traits and language use among monocultural bilinguals with a larger sample size, as well as more data to further validate the findings. This would lead to more output in language scores, resulting in more reliable outcomes.

## 7. Conclusion

In conclusion, the findings underscore the complexity of the relationship between personality traits and language use among Dutch-English monocultural bilinguals. While correlations and significant relationships were observed between some variables, the predictive power of personality on language use was limited. The findings contribute to the ongoing debate regarding cultural frame-shifting amongst monocultural versus bicultural individuals, indicating that significant differences in language use associated with personality traits may be more pronounced in bicultural individuals. Furthermore, the complexity of this relationship together with the methodological constraints in this study, suggest paths for further research.

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# 9. Appendix

## A. The entire questionnaire

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Dear participant,

Thank you for your interest in participating in this research. In this part, I will explain what the research entails and how the research will be conducted. Please take time to read the following information carefully. If any information is not clear, kindly ask questions using the contact details of the researcher provided at the end of this letter.

WHAT THIS STUDY IS ABOUT?
In this study, I aim to investigate personal attitudes and language use in everyday life. Your participation in this study will provide valuable insights into how individuals perceive and interpret various scenarios. You have been invited to participate in this study because you are fluent in both Dutch and English.

WHAT DOES PARTICIPATION INVOLVE?
Participation involves filling out a questionnaire consisting of 3 parts: personality-related questions, describing 2 images (one in English, one in Dutch), and general information. This survey will take approximately 20 minutes to complete.

DO YOU HAVE TO PARTICIPATE?
Participation in this study is completely voluntary. You can choose to withdraw from the study at any moment and choose not to answer questions without consequences or providing reasons.

ARE THERE ANY RISKS IN PARTICIPATING?
There are no direct risks in participating in this research. However, if you do not feel comfortable continuing to participate, you are allowed to withdraw from the study at any time.

ARE THERE ANY BENEFITS IN PARTICIPATING?
There are no direct benefits to participating in this research, but the research contributes to further knowledge on this research topic. Additionally, there will be a chance to win €20 by completing this survey. At the end of the survey, you can indicate

ARE THERE ANY BENEFITS IN PARTICIPATING?
There are no direct benefits to participating in this research, but the research contributes to further knowledge on this research topic. Additionally, there will be a chance to win €20 by completing this survey. At the end of the survey, you can indicate
whether you want to have a chance to win this prize by leaving your email address.

HOW WILL THE INFORMATION YOU PROVIDE BE RECORDED, STORED AND PROTECTED?
As a researcher, I guarantee confidentiality and anonymity. The data will be stored as a password-protected archive on the protected university server, as well as a password-protected computer. Only the researcher and supervisor will have access to the data. The data will be disposed of at the end of the academic year (August 2024).

WHAT ABOUT THE RESULTS OF THE STUDY?
The results of this study will be openly available through the university website in the form of a bachelor's thesis. If you wish to receive the final product through email, you will have the opportunity to leave your email address at the end of the survey. Your email address will be stored separately from the data.

ETHICAL APPROVAL This research study has obtained ethical approval from the Campus Fryslân Ethics Committee.

For any questions or concerns, please contact Danique Combee (d.z.combee@student.rug.nl).

- [ ] I give consent to participate in this study, and understand that I have the opportunity to withdraw my participation at any time without consequence.
- [ ] I confirm that I am fluent in both Dutch and English
- [ ] I am above the age of 18

→

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Deze vragenlijst bestaat uit 3 delen.

**DEEL EEN:** Vragen over uw persoonlijkheid
**DEEL TWEE:** 2 korte verhalen schrijven over afbeeldingen
**DEEL DRIE:** Beantwoorden van 4 korte vragen over het dagelijks leven

Deze vragenlijst zal ongeveer 20-25 minuten duren. Het wordt aangeraden om de vragenlijst via de laptop/computer in te vullen.

U kunt tijdens de vragenlijst niet terug, en hij dient in een keer te worden afgerond.

Om verder te gaan, klik je op de pijl hieronder. U zult eerst 6 korte, algemene vragen beantwoorden.

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Tot welke leeftijdsgroep behoort u?

- ○ 18-25
- ○ 25-40
- ○ 40-65
- ○ 65+

Met welk geslacht identificeer je je?

- ○ Man
- ○ Vrouw
- ○ Non-binair
- ○ Zeg het liever niet

Wat is uw moedertaal?

- ○ Nederlands
- ○ Engels

Hoe vloeiend schat u uzelf in in het Nederlands?

0 = Geen kennis op dit gebied
100 = Vloeiend op dit gebied (zoals een moedertaalspreker)

0 10 20 30 40 50 60 70 80 90 100

Lezen

Schrijven

Luisteren

Spraak/interactie

Ben je opgegroeid met twee of meer culturen, of in twee of meer landen?

- ○ Nee, ik heb alleen in Nederland gewoond/ben alleen beïnvloed door de Nederlandse cultuur.
- ○ Ik heb het grootste deel van mijn leven in Nederland gewoond, evenals in een ander land waarin ik voornamelijk Engels heb gesproken (voor langer dan 2 jaar)
- ○ Ik ben opgegroeid met een tweede cultuur (bijvoorbeeld de Friese cultuur).
- ○ Ik spreek vloeiend Nederlands, maar ik ben opgegroeid in een ander land
- ○ Anders

Hoe vloeiend schat u uzelf in in het Engels?

0 = Geen kennis op dit gebied
100 = Vloeiend op dit gebied (zoals een moedertaalspreker)

0 10 20 30 40 50 60 70 80 90 100

Lezen

Schrijven

Luisteren

Spraak/interactie

Q9

Ik zie mezelf als iemand die...

| | Helemaal oneens | Oneens | Eens noch oneens | Eens | Helemaal eens |
|---|---|---|---|---|---|
| 1. Communicatief, een gezelschapsmens is | ○ | ○ | ○ | ○ | ○ |
| 2. Betrokken, meevoelend is | ○ | ○ | ○ | ○ | ○ |
| 3. Geneigd is tot slordigheid | ○ | ○ | ○ | ○ | ○ |
| 4. Ontspannen is, goed met stress kan omgaan | ○ | ○ | ○ | ○ | ○ |
| 5. Weinig interesse voor kunst heeft | ○ | ○ | ○ | ○ | ○ |
| 6. Een persoon is die voor zichzelf opkomt | ○ | ○ | ○ | ○ | ○ |
| 7. Respectvol is, anderen met respect behandelt | ○ | ○ | ○ | ○ | ○ |
| 8. Geneigd is lui te zijn | ○ | ○ | ○ | ○ | ○ |
| 9. Optimistisch blijft na een tegenslag | ○ | ○ | ○ | ○ | ○ |
| 10. Benieuwd is naar veel verschillende dingen | ○ | ○ | ○ | ○ | ○ |

**Note:** This image shows 10 out of 60 questions asked from the BFI and creates an idea of what the BFI looks like in the questionnaire. For the entire list of questions asked, please refer to the Dutch BFI at the end of the appendix.

U gaat nu het **TWEEDE DEEL** van deze enquête in.

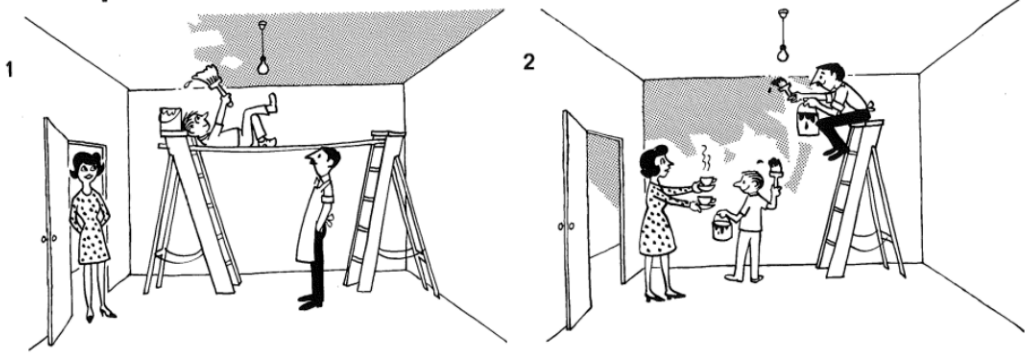
U wordt gevraagd om **korte verhalen te schrijven** op basis van de afbeeldingen die aan u worden gepresenteerd. Eén verhaal moet in het Engels worden geschreven, en de andere in het Nederlands.

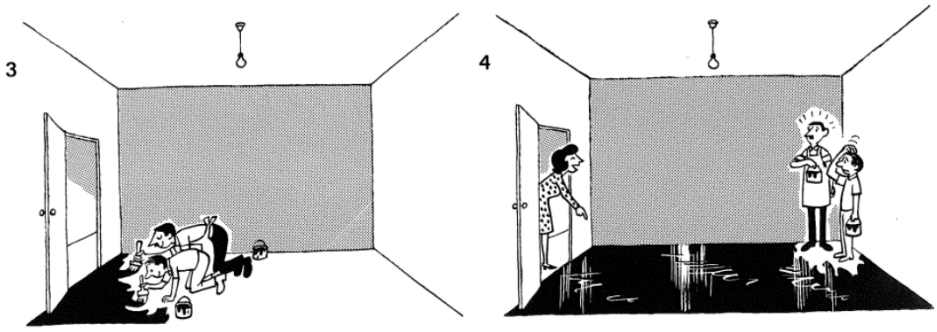
Neem de tijd om de instructies door te lezen en volg ze zo nauwkeurig mogelijk. Zodra u op de pijl klikt, ziet u de eerste afbeelding en de beschrijving.

Hieronder ziet u een afbeelding met 4 opeenvolgende scenarios. Neem de tijd om te observeren wat er gebeurd en geef daarna een uitgebreide uitleg van wat u ziet. U wordt aangemoedigd om uw verbeeldingskracht te gebruiken om te beschrijven wat u ziet, maar zeker ook om een verhaal te bedenken achter wat er gebeurt (wat niet zichtbaar is op de foto).
Er is geen goed of fout.

**Gebruik a.u.b. minimaal 8 zinnen en beschrijf het in het Nederlands. Schrijf een verhaal met een begin, een middengedeelte en een einde.**

**5 Wet paint**






Below, you can see an image including 4 successive scenarios. Please take your time to observe what is going on, and afterward, provide an extensive explanation of what you see. You are encouraged to use your imagination to describe what you see, but most definitely also to think of a story behind what is happening (things you cannot see on the image itself).
There is no right or wrong.

**Please write a minimum of 8 sentences in English. The story should include a beginning, middle and an end.**


Je gaat nu het **DERDE EN LAATSTE DEEL** van deze enquête in.
Je wordt gevraagd om vier vragen te beantwoorden. Twee in het Engels en twee in het Nederlands.
Lees de vragen zorgvuldig door en antwoord met minimaal 4 zinnen.

Q18

Antwoord de volgende vraag in het Nederlands, in minimaal 4 zinnen.

***Hoe ga je gewoonlijk om met onverwachte uitdagingen of tegenslagen?***

Q19

Antwoord de volgende vraag in het Nederlands, in minimaal 4 zinnen.

***Hoe ontspan jij je gewoonlijk na een drukke dag?***

Q20

Answer the following question in English, with a minimum of 4 sentences.

***What daily strategies or habits help you stay productive?***

Q21

Answer the following questions in English, with a minimum of 4 sentences.

***What are some of the biggest sources of stress or frustration for you on a typical day, and how do you try to deal with them?***

Ik zou graag...

- [ ] De resultaten van de studie ontvangen via de mail zodra ze zijn gepubliceerd
- [ ] Kans maken op €20

Indien u iets heeft geselecteerd, vul hier uw email adres in:

## B. The Big Five Inventory in Dutch

# BFI2-NL

***Auteurs*:**
Oliver P. John (University of California, Berkeley;
Homepage: http://psychology.berkeley.edu/faculty/profiles/ojohn.html)
Christopher J. Soto (Colby College;
Homepage: http://www.colby.edu/psych/personality-lab/)

***Vertaling en Nederlandse Bewerking*:**
Jaap Denissen (jjadenissen@gmail.com), Rinie Geenen (R.Geenen@home.nl), Marcel van Aken (M.A.G.vanAken@uu.nl)



***Instructies:***
De volgende stellingen hebben betrekking op uw opvatting over uzelf in verschillende situaties. De vijf laatste stellingen zijn overigens toegevoegd om verschillende formuleringen van bepaalde eigenschappen te vergelijken, zij lijken dus nogal op elkaar. Stoort u zich daar alstublieft niet aan maar probeert u iedere stelling gewoon op zich te beoordelen. Het is aan u om aan te geven in hoeverre u het eens bent met elke stelling, waarbij u gebruik maakt van een schaal waarop 1 helemaal oneens betekent, 5 helemaal eens betekent, en 2, 3 en 4 zijn beoordelingen daartussenin. Klik achter elke stelling een getal aan in de vakjes op de volgende schaal:

1 Helemaal oneens
2 Oneens
3 Eens noch oneens
4 Eens
5 Helemaal eens

Er zijn geen 'goede' of 'foute' antwoorden, dus selecteer bij elke stelling het getal dat zo goed mogelijk bij u past. Neem de tijd denk goed na over elk antwoord.

## Ik zie mezelf als iemand die...

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Communicatief, een gezelschapsmens is | 1 | 2 | 3 | 4 | 5 |
| 2 | Betrokken, meevoelend is | 1 | 2 | 3 | 4 | 5 |
| 3 | Geneigd is tot slordigheid | 1 | 2 | 3 | 4 | 5 |
| 4 | Ontspannen is, goed met stress kan omgaan | 1 | 2 | 3 | 4 | 5 |
| 5 | Weinig interesse voor kunst heeft | 1 | 2 | 3 | 4 | 5 |
| 6 | Een persoon is die voor zichzelf opkomt | 1 | 2 | 3 | 4 | 5 |
| 7 | Respectvol is, anderen met respect behandelt. | 1 | 2 | 3 | 4 | 5 |
| 8 | Geneigd is lui te zijn | 1 | 2 | 3 | 4 | 5 |
| 9 | Optimistisch blijft na een tegenslag | 1 | 2 | 3 | 4 | 5 |
| 10 | Benieuwd is naar veel verschillende dingen | 1 | 2 | 3 | 4 | 5 |
| 11 | Zelden uitgelaten of gretig is | 1 | 2 | 3 | 4 | 5 |
| 12 | De neiging heeft om de fout bij anderen te zoeken | 1 | 2 | 3 | 4 | 5 |
| 13 | Verantwoordelijk, degelijk is | 1 | 2 | 3 | 4 | 5 |
| 14 | Humeurig is, wiens stemming op en neer gaat | 1 | 2 | 3 | 4 | 5 |
| 15 | Vindingrijk is, creatieve manieren verzint om dingen te doen | 1 | 2 | 3 | 4 | 5 |
| 16 | Doorgaans stil is | 1 | 2 | 3 | 4 | 5 |
| 17 | Weinig sympathie voor anderen voelt | 1 | 2 | 3 | 4 | 5 |
| 18 | Systematisch is, dingen graag op orde houdt | 1 | 2 | 3 | 4 | 5 |
| 19 | Gespannen kan zijn | 1 | 2 | 3 | 4 | 5 |
| 20 | Gefascineerd is door kunst, muziek of literatuur | 1 | 2 | 3 | 4 | 5 |
| 21 | De toon zet, als een leider handelt. | 1 | 2 | 3 | 4 | 5 |
| 22 | Snel ruzie maakt | 1 | 2 | 3 | 4 | 5 |
| 23 | Moeite heeft om met taken te beginnen | 1 | 2 | 3 | 4 | 5 |
| 24 | Zich zeker, op zijn gemak met zichzelf voelt | 1 | 2 | 3 | 4 | 5 |
| 25 | Intellectuele, filosofische discussies uit de weg gaat | 1 | 2 | 3 | 4 | 5 |
| 26 | Minder levendig dan anderen is | 1 | 2 | 3 | 4 | 5 |
| 27 | Vergevingsgezind en verdraagzaam is | 1 | 2 | 3 | 4 | 5 |
| 28 | Enigszins nalatig kan zijn | 1 | 2 | 3 | 4 | 5 |
| 29 | Emotioneel stabiel is, niet gemakkelijk overstuur | 1 | 2 | 3 | 4 | 5 |
| 30 | Weinig creativiteit heeft | 1 | 2 | 3 | 4 | 5 |
| 31 | Soms verlegen, introvert is | 1 | 2 | 3 | 4 | 5 |
| 32 | Behulpzaam en onzelfzuchtig ten opzichte van anderen is | 1 | 2 | 3 | 4 | 5 |
| 33 | Dingen netjes en verzorgd houdt | 1 | 2 | 3 | 4 | 5 |
| 34 | Zich veel zorgen maakt | 1 | 2 | 3 | 4 | 5 |
| 35 | Waarde hecht aan kunst en schoonheid | 1 | 2 | 3 | 4 | 5 |
| 36 | Moeite heeft om andere mensen te overtuigen | 1 | 2 | 3 | 4 | 5 |
| 37 | Soms onbeleefd tegen anderen is | 1 | 2 | 3 | 4 | 5 |
| 38 | Efficiënt is, klussen afkrijgt | 1 | 2 | 3 | 4 | 5 |
| 39 | Zich vaak verdrietig voelt | 1 | 2 | 3 | 4 | 5 |
| 40 | Genuanceerd en diep over dingen nadenkt | 1 | 2 | 3 | 4 | 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 41 | Vol energie is | 1 | 2 | 3 | 4 | 5 |
| 42 | Niet zo snel uitgaat van de goede bedoelingen van anderen | 1 | 2 | 3 | 4 | 5 |
| 43 | Betrouwbaar is, verwachtingen altijd waarmaakt | 1 | 2 | 3 | 4 | 5 |
| 44 | Zijn/haar emoties onder controle houdt | 1 | 2 | 3 | 4 | 5 |
| 45 | Weinig verbeeldingskracht heeft | 1 | 2 | 3 | 4 | 5 |
| 46 | Spraakzaam is | 1 | 2 | 3 | 4 | 5 |
| 47 | Koud en ongevoelig kan zijn | 1 | 2 | 3 | 4 | 5 |
| 48 | Er een rommel van maakt, niet opruimt | 1 | 2 | 3 | 4 | 5 |
| 49 | Zich zelden angstig of bang voelt | 1 | 2 | 3 | 4 | 5 |
| 50 | Vindt dat dichtkunst en toneel maar saai zijn | 1 | 2 | 3 | 4 | 5 |
| 51 | Het liefst ziet dat anderen het voortouw nemen | 1 | 2 | 3 | 4 | 5 |
| 52 | Beleefd, hoffelijk tegenover anderen is | 1 | 2 | 3 | 4 | 5 |
| 53 | Volhoudend is, werkt tot de taak af is | 1 | 2 | 3 | 4 | 5 |
| 54 | Ertoe neigt zich terneergeslagen, somber te voelen. | 1 | 2 | 3 | 4 | 5 |
| 55 | Weinig interesse in abstracte ideeën heeft | 1 | 2 | 3 | 4 | 5 |
| 56 | Veel enthousiasme en uitbundigheid uitstraalt | 1 | 2 | 3 | 4 | 5 |
| 57 | Van het beste in mensen uitgaat | 1 | 2 | 3 | 4 | 5 |
| 58 | Zich soms onverantwoordelijk en ondoordacht gedraagt | 1 | 2 | 3 | 4 | 5 |
| 59 | Opvliegend is, makkelijk emotioneel wordt | 1 | 2 | 3 | 4 | 5 |
| 60 | Origineel is, met nieuwe ideeën komt | 1 | 2 | 3 | 4 | 5 |

## Scoring Key

Item numbers for the BFI-2 domain and facet scales are presented below. Reverse-keyed items are denoted by “R.”

**Domain Scales**

Extraversion: 1, 6, 11R, 16R, 21, 26R, 31R, 36R, 41, 46, 51R, 56
Agreeableness: 2, 7, 12R, 17R, 22R, 27, 32, 37R, 42R, 47R, 52, 57
Conscientiousness: 3R, 8R, 13, 18, 23R, 28R, 33, 38, 43, 48R, 53, 58R
Negative Emotionality: 4R, 9R, 14, 19, 24R, 29R, 34, 39, 44R, 49R, 54, 59
Open-Mindedness: 5R, 10, 15, 20, 25R, 30R, 35, 40, 45R, 50R, 55R, 60

**Facet Scales**

Social Engagement: 1, 16R, 31R, 46
Assertiveness: 6, 21, 36R, 51R
Energy Level: 11R, 26R, 41, 56
Compassion: 2, 17R, 32, 47R
Respectfulness: 7, 22R, 37R, 52
Acceptance of Others: 12R, 27, 42R, 57
Organization: 3R, 18, 33, 48R
Productiveness: 8R, 23R, 38, 53
Responsibility: 13, 28R, 43, 58R
Anxiety: 4R, 19, 34, 49R
Depression: 9R, 24R, 39, 54
Emotional Volatility: 14, 29R, 44R, 59
Aesthetic Sensitivity: 5R, 20, 35, 50R
Intellectual Curiosity: 10, 25R, 40, 55R
Creative Imagination: 15, 30R, 45R, 60