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TRABAJO DE FIN DE GRADO

Assessing the big five personality model as a tool for  
the analysis of literary/filmic characters

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## Abstract

In the present essay, I study the feasibility of the big five personality inventory as a tool for the analysis and discussion of fictional characters. In this case, this personality inventory is applied to analyse the television character Walter White. To achieve this goal, I carry out an experiment in which six subjects (divided into two different conditions) watch the episode “Ozymandias” of the television series *Breaking Bad* and answer a questionnaire. The questionnaire is based on the NEO Personality Inventory, and participants have to fill in the questionnaire as they think Walter White would describe himself. Eventually, the study concludes that the big five personality inventory is a reliable and useful tool for the exploration of fictional characters’ qualities, as well as a greatly intuitive model which can be used with the same effectiveness by subjects with or without prior knowledge of its five dimensions.

*Keywords:* Big five personality inventory, Walter White, personality psychology, fictional characters, assessment

## Resumen

En el presente ensayo estudio la viabilidad del modelo psicológico de los cinco grandes como instrumento para el análisis de la caracterización de personajes ficticios, en particular, del personaje de televisión Walter White. Con este fin realizo un experimento en el que seis sujetos divididos en dos condiciones visualizan el capítulo “Ozymandias” de la serie *Breaking Bad* y, posteriormente, contestan un cuestionario basado en el Inventario de Personalidad NEO. Los participantes deben completar el cuestionario tal y como creen que Walter White se describiría a sí mismo. Finalmente, concluimos que el inventario de personalidad de los cinco grandes es una herramienta fiable y útil para la exploración de personajes ficticios, además de un modelo altamente intuitivo pudiendo ser utilizado con igual eficacia por sujetos con o sin conocimiento previo de las cinco dimensiones que lo componen.

*Palabras clave:* Modelo de los cinco grandes, Walter White, psicología de la personalidad, personajes ficticios, valoración



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## 1. Introduction

Over the last two centuries, literature and psychology have maintained a bilateral relation, where literature offers data useful for psychological analyses, and psychology provides an exploration of the psyche of the elements surrounding the literary work, such as author and reader. Interdisciplinary approaches provide a nimble and easy progress of different subject matters and, while psychology moves forward, the rest of disciplines (as literature) can/should benefit from such progress. Since literary theory started to be interested in the role of the reader and his/her experience with the literary work, some psychological tools were applied to the analysis and, over time, the use of these tools was extended to the analysis of other literary elements, such as characters. One of the most recent psychological tools applied to literature is known as the big five personality inventory. The big five is a personality-measuring model consisting of five superordinate traits used to explore individual's characteristics, usually through an inventory denominated NEO-PI-R. Big five questionnaires are frequently used to evaluate physical individuals and it is not common to find research incorporating this inventory to explore fictional characters, at least using the empirical method. However, authors such as McCrae, Gaines and Wellington (2012) have already taken advantage of this psychological model to perform literary analyses from a deductive perspective. Currently, researchers still proving big five qualities and benefits since it is a relatively recent model and, therefore, it is necessary to test its feasibility when applied to fictional character. The main purpose of this dissertation is to assess the capacity of the widely recognized big five model to explore fictional characters' personality from an empirical point of view. I conducted an experiment with the aim to measure the response of various subjects to the television character Walter White through a personality-measuring questionnaire based on the NEO-PI-R. I divided the experiment participants into subjects with/without prior knowledge of the model in order to discover whether the big five model is intuitive and describes the usual perception of readers/spectators. In addition, I provide the reader with a review of the relationship between psychology and literature, and two sections including general information about Walter White and the big five model.

## 2. Literature and psychology: a review

The advent of reader-response criticism in the 60's introduced the empirical method in literature with the purpose to measure reader's mental processes throughout the reading experience and explore reader's response to the literary work. As a result, several theorists defended the need to incorporate the empirical method to the discipline in order to solve problems, such as the opposition of ideas regarding the same respect and the lack of precision of literary norms and theories. For this purpose, the research group NIKOL ("nicht-konservative Literaturwissenschaft"), formed by Siegfried J. Schmidt, P. Finke, W. Kindt, J. Wirrer, and R. Zobel among others, developed during the 70's and 80's the ESL (Empirical Science of Literature). According to Schmidt (1983), the ESL "attempts to provide an autonomous paradigm for the study of literature despite the insufficiencies of its current state of elaboration" (p. 19). Later on, in 1987, Siegfried J. Schmidt created the International Society for the Empirical Study of Literature or IGEL (Internationale Gesellschaft für Empirische Literaturwissenschaft) with the aim to promote and prove the benefits of the empirical method in literature. Some of its notable members are David Miall, Donald Kuiken, and Arthur C. Graesser. Since 2011, the association owns the academic journal *Scientific Study of Literature* that, according to John Benjamins Publishing Company (2017), publishes empirical studies on different disciplines to "cast light on the structure and function of literary phenomena" (para. 1).

Martindale (1996), Miall (2000), and Hakemulder (2006) defended the need to incorporate the empirical method based on the benefits obtained from its application to the study of the act of reading, particularly the psychological approach of reader-response criticism. As we can see, the empirical approach is directly related with literature and psychology interdisciplinary studies and, consequently, psychology has generally been applied to explore readers' mind in relation to text interpretation. Norman N. Holland (1975) was one of the earliest authors to use psychology to analyse how literary experience can differ depending on readers' personality. Miall and Kuiken used experiments to explore the emotional and psychological responses to literature, and they have incorporated several psychology theories and advances to their studies (Miall 1986, 1989), (Miall & Kuiken, 1994). Both created a useful reader's response questionnaire to



measure reading process aspects, such as insight, empathy or concern with author (Miall & Kuiken, 1995).

Triplett (2004), Pinnell (2006), Larson (2009), Hogan (2011), and Graesser & D'Mello (2012) are some current authors exploring reader's mind and emotions towards the reading experience; and some of these research papers have educational purposes. Besides, psychology research tools are spreading to other literary fields, for instance, stylistics. Nezami (2012) and Rashkin (2011) investigated the emotional effect of different literary devices and its relation to the author's mind. Miall and Kuiken's latest works explored a new mode of reading, they called "expressive enactment", that involves "reader identification with characters, repeated variation of affective themes, and progressive transformation of feelings and self-perception" (Kuiken, n.d., para. 4). The current tendency is to explore cognitive processes with the purpose of discovering why readers/spectators feel sympathy towards morally reprehensive characters (villains and antiheroes). Some of the authors with publications respecting this issue are Marino (2008), Sanders & Tsay-Vogel (2016), Deggans (2011), Barber (2014), and Bender (2013).

Moreover, psychology has offered helpful tools for literary research, such as personality questionnaires. For instance, Nencini (2007) constructed a questionnaire based on the exploration of the protagonist of the Italian novel "Sostiene Pereira" and handed it to eighteen participants to evaluate the protagonist's self. However, according to McCrae, Gaines and Wellington (2012), these types of questionnaires are not generalized methods and therefore "what is needed is a standard set of personality traits that encompass the full range of characteristics (...) and the obvious choice is the FFM." (p. 77). The FFM (five factor model) or big five model is a psychological model of personality constituted by a set of five traits or dimensions: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (OCEAN acronym). It is a widely accepted model used to define and explore the personality of a person based on these five domains.

Johnson, Carroll, Gottschall and Kruger (2011) carried out an experiment where 519 scholars had to answer an online questionnaire regarding the personality of 435 characters belonging to Victorian novels. The questionnaire included character's goals, achievements, and personality according to the big five model. A recent work by Maslej,

Oatley and Mar (2017) examined the relation between engaging fictional characters and its creator's qualities based on the big five dimensions. The study reached the conclusion that creative authors who score high on openness to experience create more complex and interesting fictional characters. Cámara-Arenas (2011) provided us with a better understanding of literary and filmic villainy through the examination of different psychological perspectives, including the big five model. In addition, the author offered us a guideline that would enrich our reading experience of the villain. In the same vein, Berry and Brown (2017) proposed a psychological scheme to classify literary characters. To achieve this purpose, they examined the validity of the scheme in 142 participants and 40 characters using the big five model.

As we can appreciate, the use of the big five model is spreading since it provides interesting discussions, and it is a wide field to explore yet. To finish the review I think is important to point out the suggestions for future big five model research provided by McCrae, Gaines and Wellington (2012). Some of their suggestions are to study the five traits distribution on the literary genres, to explore the relation between characters' traits and literary movements, and to investigate whether authors tend to create characters with similar qualities. It is obvious that the big five model offers the researchers a great number of possibilities to explore literature.

### **3. Walter White (*Breaking Bad*)**

Walter White is the main character of the drama television series *Breaking Bad*. He is an ordinary chemistry teacher in Albuquerque where he lives with his wife and their disabled son. His wife is pregnant and a teacher's salary is not enough to pay the bills, so Walter works on a car wash in the afternoon. Walter is presented to us as unsuccessful, boring and weak, and to top it all, he is diagnosed with inoperable lung cancer. At this point, everything changes. He feels pressured to give his family a future and decides to use his chemical knowledge to "cook" methamphetamine. Two seasons later, and with the help of his distributor Jesse Pinkman, Walter is well recognized for his blue crystal meth. His clandestine name is Heisenberg and he has become the best meth producer of New Mexico. As you can guess, Walter carries out some cruel acts to survive in the drug trafficking world.

*Breaking Bad* has been acclaimed as the best television series of all times (Allen, 2013; MacInnes, 2018) and the last episode of the series registered an audience of 10.3 million spectators (Hibberd, 2013); consequently, its protagonist has been object of several studies and research papers in psychology and literature. The complexity and realism of the character provoke curiosity in critics, scholars, and followers; his transformation throughout the five seasons is remarkable and greatly elaborate. All agree in placing Walter in the highest position of the antiheroes' podium. The character and the series have been useful for the analysis of diverse issues, such as masculinity and the representation of men as father and husband (Wille, 2014; Johnston et al. 2015; Peter, 2015; Johnston, 2016), feminism and gender violence (Gunn, 2013; Wakeman, 2017), and even television tourism (Tzanelli & Yar, 2016). The character has also been used for the exploration of the antihero archetype (Peter, 2015; García, 2013), the possibilities of fictional characterization and television style (Logan, 2013; Cardwell et al., 2013), and the narrative construction of television fiction (Mesonero-Izquierdo, 2013). In almost all articles and research papers, Walter is described as an ambiguous character. On one hand, we have a melancholic, submissive, coward, insecure, conservative, familiar, relaxed and pathetic character, and on the other hand, we have a furious, domineering, brave, risky, conflictive and respected character; or what is the same, we have Walter and Heisenberg (Mesonero-Izquierdo, 2013).

Regarding the matter that concerns us, Walter White has also been examined from a psychological perspective. García (2013) made a review of the character including philosophical and psychological aspects. The article addresses interesting concepts such as empathy, alignment, and complicity in order to explore why the spectator feels empathy and other positive emotions for a character that is objectively malevolent. Various webpages discuss the moment when Walter White "breaks bad" and transforms into Heisenberg, while other authors, such as Meslow (2012) and Cuts (2013), develop the idea of the innate malevolence in the character giving us instances of his personality qualities. These divided opinions are based on the mystery of Walter's motivation to become into the cruel meth cooker Heisenberg. Even when the series is over, the spectator does not know whether Walter's real motivation is to sustain his family or he has become a delinquent for his own pleasure.

As I have previously exposed, the current tendency in empirical literature concerning antiheroes and villains is to investigate why and how readers/spectators feel attracted to these unmoral characters and, concerning this research, the big five and other psychological models play a fundamental role. As we can see, Walter White is a useful character for interdisciplinary studies and his ambiguous personality and varied qualities make him an ideal candidate for my experiment. At the same time, the involvement of moral and ethical aspects in the definition of the character supposes an additional challenge to the validation of the big five model as a feasible tool for the analysis of fictional characters.

#### **4. The big five personality inventory**

The big five personality inventory was developed during the twentieth century due to the absence of a descriptive model to study personality characteristics (John & Srivastava, 1999). The idea to create a glossary of personality terms was growing due to the rise of experimental psychology during the nineteenth and twentieth century. This idea led to the “lexical hypothesis”, which proposes that, over time, an accumulation of vocabulary in languages is produced to define individual’s characteristics. This accumulation of vocabulary derived from people’s daily life discussions of individuals’ qualities. From Galton (1884) to Cattell (1943) the idea was materialized and a summarized list of personality terms was created. The terms constituting the glossary were descriptors used to talk about human acts, behavior, and traits (John & Srivastava, 1999). In the 1980s, the American psychologist Lewis Goldberg coined the term “big five” (Goldberg, 1993), based on the previous observation by Tupes and Christal (1961) of five broad factors, and on his own lexical project. Shortly after, in 1985, Paul Costa and Robert McCrae developed an inventory to examine an individual’s big five traits. It is denominated NEO PI-R and a revised version of this inventory is employed nowadays (McCrae, Kurtz, Yamagata & Terracciano, 2011).

The big five model, as we know it today, involves five dimensions (OCEAN) each of them divided into six facets based on correlated adjectives. According to Costa and McCrae (1992) and John and Srivastava (1999), the six facets and the correlated trait adjectives are the following:

Table 1

*Big Five dimensions, facets and correlated trait adjectives*

Big five dimensions		Facet (and correlated trait adjective)
<b>O</b>	Openness vs. closedness to experience	Ideas
		Fantasy
		Aesthetics
		Actions
		Feelings
<b>C</b>	Conscientiousness vs. lack of direction	Values
		Competence
		Order
		Dutifulness
		Achievement striving
<b>E</b>	Extraversion vs. introversion	Self-discipline
		Deliberation
		Gregariousness
		Assertiveness
		Activity
<b>A</b>	Agreeableness vs. antagonism	Excitement-seeking
		Positive emotions
		Warmth
		Trust
		Straightforwardness
<b>N</b>	Neuroticism vs. emotional stability	Altruism
		Compliance
		Modesty
		Tender-mindedness
		Anxiety
		Angry hostility
		Depression
		Self-consciousness
		Impulsiveness
		Vulnerability

*Note.* Extracted from John & Srivastava (1999), *The Big-Five trait taxonomy: history, measurement, and theoretical perspectives*, p. 110.

Openness to experience. Openness to experience has a motivational and a structural component (McCrae, 2004), as well as intellectual and experiential subcomponents (Connelly, Ones & Chernyshenko, 2014). People scoring high on openness to experience are creative, curious, adventurous, and imaginative. They prefer unconventional ideas, try new activities, and they tend to choose no routine jobs. By contrast, people scoring low on this trait tend to be unimaginative, conventional, traditional, less interested in aesthetics, etc. (Silvia et al. 2009). They are likely to stay in their comfort zone, choose predictable activities and situations, and they pass up new opportunities and extremely exciting experiences. Moreover, Schretlen et al. (2010) have reported a correlation between verbal/crystallized intelligence and a high score in openness to experience. According to McCrae and Costa (1987) “intelligence may in some degree predispose the individual to openness, or openness may help develop intelligence, but the two seem best construed as separate dimensions of individuals differences” (p. 88).

Conscientiousness. The second trait is associated with carefulness and order. People scoring high on conscientiousness tend to be organized, self-demanding, neat, reliable, hardworking and efficient; on the other hand, low conscientiousness personalities are easy-going, spontaneous, disorderly, laid back and careless (Thompson, 2008). The trait is divided into orderliness and industriousness aspects; the first is associated with order and organization, and the latter with work and productivity (DeYoung et al., 2007). For instance, an unconscientious person would forget to deliver the weekly report to his/her boss, while a conscientious person is careful to avoid making this kind of mistakes.

Extraversion. The American Psychological Association describes extraversion as “an orientation of one’s interests and energies toward the outer world of people and things rather than the inner world of subjective experience.” People who exhibit extraverted personalities are usually talkative, energetic, outgoing and they are comfortable working in groups; while introverted personalities are shy, quiet and reserved and prefer working alone (Thompson, 2008). For instance, an introverted person would prefer solitary activities such as reading, hiking, playing with computers, while an extroverted person would choose social activities such as going to parties or take dancing lessons.

Agreeableness. This superordinate trait is directly related to prosocial behavior and cooperation since those individuals scoring high on agreeableness are more likely to be altruists (Graziano, 2007), while low agreeableness is associated with antisocial behavior (Costa & McCrae, 1992). In 2008, Edmund R. Thompson improved the word markers previously developed by Goldberg (1992) and Saucier (1994). According to these revised markers, agreeable individuals are kind, warm, sympathetic and cooperative. An agreeable personality is likely to make friends easily, since they show empathy and are trustworthy; they prefer to work in groups rather than alone and tend to choose little disciplinary jobs. In contrast, disagreeable individuals tend to be harsh, rude, cold and unsympathetic (Thompson, 2008); usually, they do not sympathize with other people's problems and are tough-minded individuals.

Neuroticism. The last trait is probably the most complex to define and interpret. In personality theory there is no doubt that neuroticism must be one of the high-order traits, however, there is not a total agreement on its definition. Eysenck and Eysenck (1985) define the trait as a tendency to agitate quickly with stimuli; in turn, Costa and McCrae (1992b) define neuroticism as a personality domain determined by emotional instability, while other researchers associate neuroticism with an inefficient management of stress (Matthews et al., 2003). Evidently, these definitions overlap creating confusion to determine the facets of neuroticism. Nevertheless, people scoring high on neuroticism tend to experience negative feelings frequently and intensely, such as anxiety, mood swings, envy, jealousy, and irritability. On the contrary, people scoring low on neuroticism tend to be relaxed, calm, emotionally stable and unenvious (Thompson, 2008). In addition, researchers have reported a relation between high neuroticism and mental disorders. For instance, mood disorders (bipolar disorder, schizophrenia, hypochondriasis, and eating disorders) have a strong association with neuroticism (Jeronimus, Kotov, Riese, & Ormel, 2016).

Due to the expansion of the model, researchers found evidence of a missing trait that was not measured by the big five. This trait is known as honesty-humility and it was incorporated to the other five traits creating a new model denominated HEXACO. The facets forming this new trait are sincerity, fairness, greed avoidance, and modesty; and some of its correlated adjectives are sincere, honest, faithful, loyal, and modest (Ashton & Lee, 2007). Besides HEXACO, researchers created another model useful to

complement the big five. It is known as the dark triad and it measures negative aspects of an individual's personality exclusively (narcissism, machiavellianism, and psychopathy). Of course, there exist other psychological models and personality inventories, but HEXACO, dark triad and big five have shown to complement efficiently. In spite of the posterior creation of these two additional models, big five is widely used and accepted in psychology nowadays. Furthermore, according to Ashton and Lee (2005), big five questionnaires partly represent some facets of honesty-humility HEXACO trait, and its two traits agreeableness and neuroticism are more significant than honesty-humility, agreeableness and emotionality HEXACO traits for some purposes. In addition, there exist two main types of questionnaires; lexical based and statement based questionnaires. Lexical based questionnaires consist of a list of contrasting adjectives, known as five factor markers, such as silent/talkative, cold/warm, irresponsible/responsible, etc. In turn, statement based questionnaires consist of a number of statements representing facets of the five dimensions.



## 5. Method

### 5.1. Participants

Six participants took part in the present study. They formed two groups of three people; group A and group B. Both groups were homogeneous regarding age, gender, and formal education, and all subjects are Spanish native speakers with basic English knowledge. The following table shows the age, gender, and education level of the participants.

Table 2

*Subjects' age, gender and formal education*

Subject	Age	Gender	Education
Subject A1	26	Female	Undergraduate
Subject A2	22	Female	Graduate
Subject A3	56	Male	Graduate
Subject B1	42	Female	Basic School Education
Subject B2	55	Female	Graduate
Subject B3	23	Male	Undergraduate

In order to test whether the model is intuitive, I have divided the participants into two conditions: Group A was briefly trained in big five model including an explanation of the model history, traits, and facets, while group B has not received any information about the model.

### 5.2. Code of Ethics

None of the participants received any incentive or reward to take part in the experiment. Participants provided their consent to incorporate their answers to the study anonymously.

### 5.3. Procedure

I met each group separately. The participants watched the Spanish version of the episode “Ozymandias” of the television series *Breaking Bad*; they were comfortably seated in a living room, watched the episode with no pause and were asked not to talk to each other. The session was set out as informal. After the watch, they were given a the personality-measuring questionnaire based on the big five inventory (Ambridge, 2014)

with the following instruction: “Complete the following questionnaire according to the answers Walter White would provide, assuming he answers with total sincerity<sup>1</sup>”. The questionnaire can be found in the appendix section. It is a statement-based questionnaire and consists of fifty statements representing dimensions of the five traits of the model. Participants had to express their results marking with an X in a Likert scale. The five answering options are: very inaccurate, moderately inaccurate, neither inaccurate nor accurate, moderately accurate, very accurate. Each of these five options is associated to a score from one to five. The instructions to obtain the punctuation of each trait are provided in the appendix section. Score ranges are expressed in the following table:

Table 3

*Score ranges*

Low	Medium-Low	Medium	Medium-High	High
10-17	18-25	26-33	34-41	42-50

Therefore, the lowest score would be 10 and the highest score would be 50. We consider the polarity of the score is positive when it is 30 or higher; for instance, if a subject bestows Walter 33 points on openness to experience, we consider the character as open. Once I had the scores arranged, I have calculated dispersion measures to analyse the results. First, I calculated the total mean and the mean of the results of each group, and then I calculated the standard deviation<sup>2</sup> and the statistical range<sup>3</sup> of the results of both group for each of the five traits and then I did the same with the results of each group separately. In this case, we consider the statistical range is significant when is higher than 20 since it takes 20 points to change the polarity of a score form negative to positive. The model will prove its validity, effectiveness, and intuition if scores are concentrated and little dispersed.

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<sup>1</sup> “Completa el siguiente cuestionario como lo haría Walter White, asumiendo que este contestase con total sinceridad”.

<sup>2</sup> The standard deviation is a statistics tool that measures the amount of dispersion of a set of data values (Bland & Altman, 1996).

<sup>3</sup> The range is a tool used in statistics to measure the difference between the largest and the smallest values (Woodbury, 2001).

## 5.4. Materials

The materials used for the experiment were an episode of the series *Breaking Bad* and the personality questionnaire. The episode used for the experiment is called “Ozymandias”<sup>4</sup> and it is the fourteenth episode of the fifth season. The election of a single episode was not easy, since all episodes offered interesting possibilities. However, I was looking for an episode in which intense emotions and empathy processes could be expected from the spectator. If we take into account the climactic moment, dangers, decisions, actions, etc., doubtlessly, “Ozymandias” was the best option. The flashback at the beginning of this five-act episode offers the necessary context to understand the series and shows us the coward and pathetic Walter who would sacrifice everything for his family. In the second act of the episode, five seasons later, Walter still being the same ridiculous man with no control over the situation. This is the penultimate episode of the series and there are some loose ends to tie up, and as the episode progresses Walter shows his darkest and cruel side. The title (“Ozymandias”), based on the Percy Bysshe Shelley poem, already indicates the decline of the character; he has to make risky decisions and take desperate measures. The climax shows what Walter is capable of, but in the resolution act, again the vulnerable and benevolent side of the character is exposed. “Ozymandias” is the favourite episode of the creator of the series, Vince Gilligan<sup>5</sup>, while a good number of *Breaking Bad* followers and the media have acclaimed it too. For instance, *The Independent* proposed “Ozymandias” as “the greatest episode of TV ever written”<sup>6</sup>, and the episode won the *Outstanding Writing for a Drama Series Emmy* in 2014<sup>7</sup>.

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<sup>4</sup>The reader can find the synopsis of the episode “Ozymandias” at [https://www.imdb.com/title/tt2301451/plotsummary?ref\\_=tt\\_stry\\_pl#synopsis](https://www.imdb.com/title/tt2301451/plotsummary?ref_=tt_stry_pl#synopsis)

<sup>5</sup> <https://www.hollywoodreporter.com/live-feed/emmys-breaking-bad-writer-overwhelming-726953>

<sup>6</sup> <https://www.independent.co.uk/arts-entertainment/tv/features/is-breaking-bads-ozymandias-the-greatest-episode-of-tv-ever-written-8821985.html>

<sup>7</sup> <https://www.emmys.com/awards/nominees-winners/2014/outstanding-writing-for-a-drama-series>

## 6. Results

Table 4

*Group A and group B scores*

Subject	Open			Conscientious			Extrovert			Agreeable			Neurotic			Mean
	Sc	R	P	Sc	R	P	Sc	R	P	Sc	R	P	Sc	R	P	
A1	34	M-H	+	<b>48</b>	H	+	33	M	+	<b>24</b>	M-L	-	35	M-H	+	
A2	33	M	+	41	M-H	+	25	M-L	-	24	M-L	-	<b>34</b>	M-H	+	
A3	<b>35</b>	M-H	+	41	M-H	+	<b>35</b>	M-H	+	18	M-L	-	38	M-H	+	
SR	2			7			10			6			3			
$\sigma$	0,8			3,3			4,3			2,8			1,7			
B1	33	M	+	39	M-H	+	<b>23</b>	M-L	-	<b>11</b>	L	-	<b>50</b>	H	+	
B2	30	M	+	41	M-H	+	28	M	-	15	L	-	42	H	+	
B3	<b>26</b>	M	-	<b>36</b>	M-H	+	35	M-H	+	21	M-L	-	46	H	+	
SR	7			5			12			10			8			
$\sigma$	2,9			2			4,9			4,1			3,3			
Total SR	9			12			12			13			16			
Total $\sigma$	3			3,6			4,8			4,7			5,8			

*Note.* Sc=Score, R=Range, P=Polarity,  $\sigma$ =Standard deviation, SR=Statistical range L=Low, M-L=Medium-Low, M=Medium, M-H=Medium-High, H=High. Highest and lowest score of each dimension is marked in boldface type.

Table 4 contains the results of both groups and the dispersion measures. In the column denominated “Sc”, the scores obtained in the questionnaire by each subject are expressed. The belonging range of each score is indicated in the column “R”. The column called “P” expresses the polarity of the scores; polarity is positive when the score is higher than 30, and negative when the score is lower than 30 (see page 18). Rows with the symbol “ $\sigma$ ” indicate the standard deviation of each group. Rows called “SR” indicate the statistical range of each group. At the end of the table, the standard deviation (“Total  $\sigma$ ”) and the statistical range (“Total SR”) for the results of both groups are expressed. Finally, the column named “Mean” indicates the mean value of the statistical range and standard deviation of each group, and the mean value of the total range and the total standard deviation.

Figure 1

*Total mean of the results, group A results mean and group B results mean*

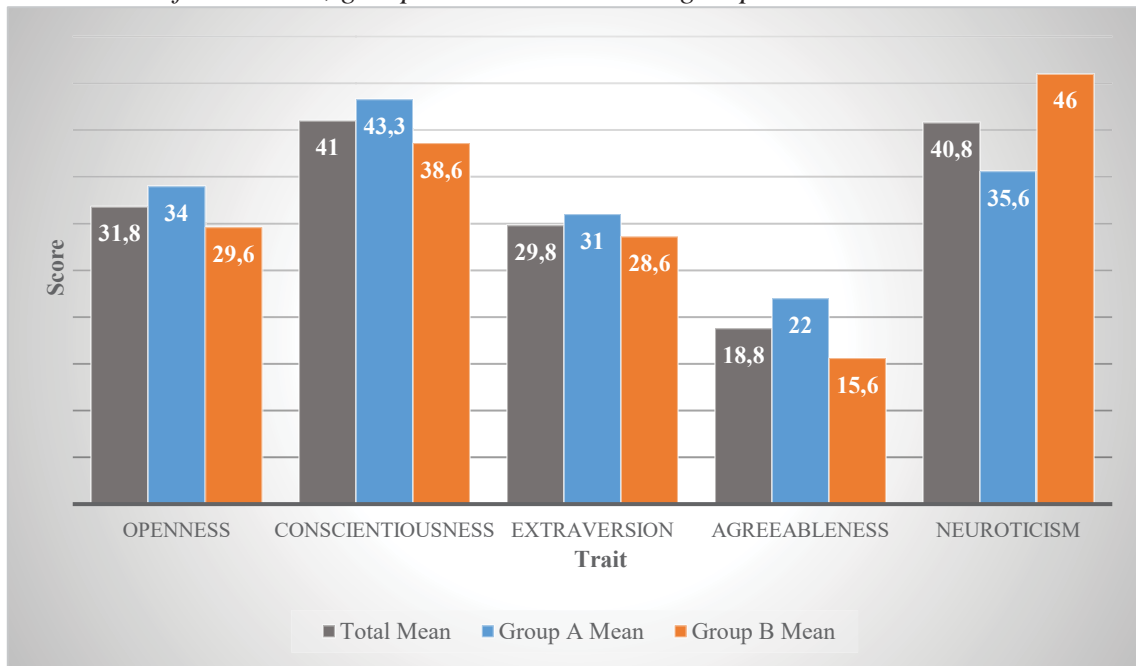


Figure 2

*General standard deviation for each trait*

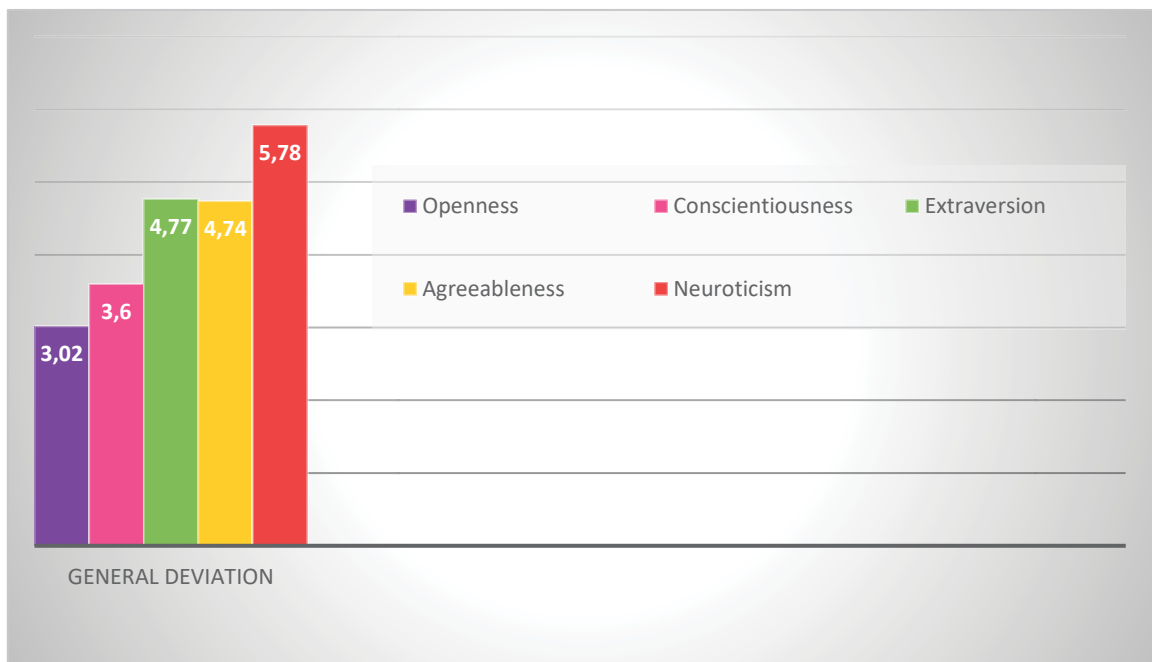


Figure 3

*Standard deviation of each group*

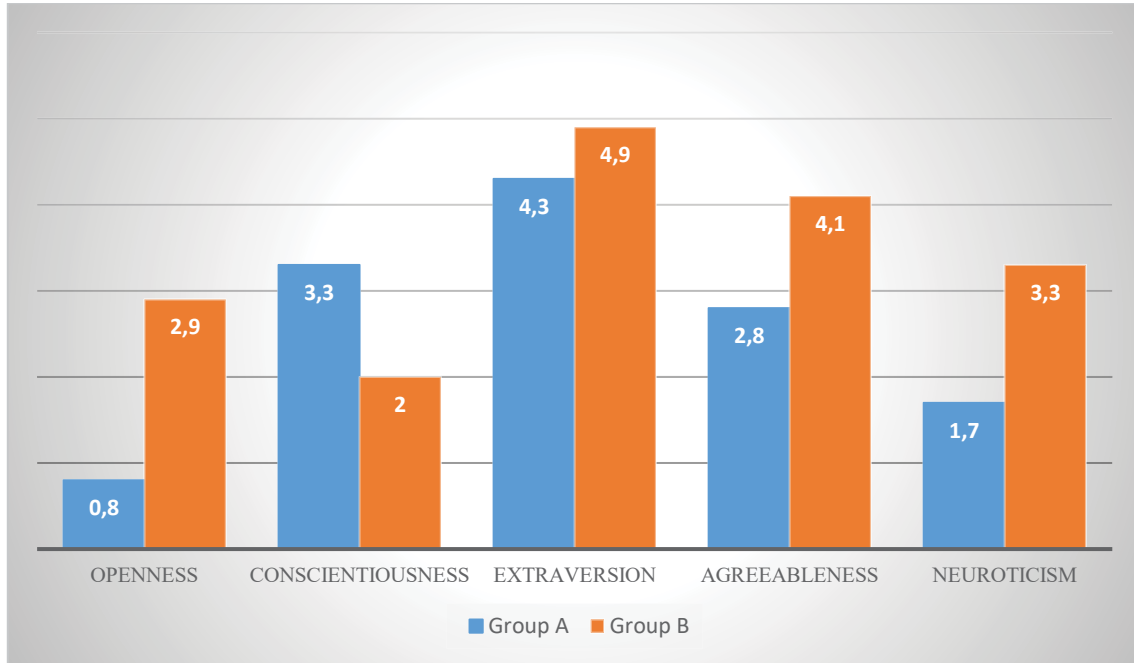


Figure 1 shows the mean value of both groups results on each trait and, as we can observe, means are similar. The trait with most similar means is extraversion while the one with least similar means is neuroticism. Generally, group A confers higher scores than group B; however, this tendency is inversed in neuroticism dimension where group B exhibits higher results than group A. This is accordingly shown by dispersion measures expressed in figure 2 and table 4. Neuroticism results present the highest total dispersion, followed by extraversion and agreeableness. These two dimensions present an almost exact deviation. The dimensions with the lowest total dispersion are openness and conscientiousness. Consequently, neuroticism presents the highest statistical range too, followed by agreeableness, while openness presents the lowest total statistical range. If we take a look at figure 3 where the standard deviation of each group is expressed, we appreciate that both groups exhibit the highest dispersion in extroversion. Subjects of the same group disagree on the score of this dimension, and the scores range from medium-low to medium-high. In group A the lowest dispersion is presented in openness with just 2 points of statistical range, in turn, group B exhibits the lowest deviation in conscientiousness with 5 points of statistical range. There is no statistical range above 20 (see page 18). Moreover, figure 3 reflects a higher disagreement by subjects of group B

in all dimensions, except of conscientiousness. In this dimension, group A deviation and statistical range are 3,3 and 7 respectively, while group B values on these dispersion measures are 2 and 5 respectively. The means of the dispersion measures provides us with a general overview: Group A means for statistical range and standard deviation are 5,6 and 2,58 respectively; group B means for these values are lower (8,4 and 3,44); and means for total statistical range and total standard deviation are 12,4 and 4,38.

Respecting polarity (see table 4), this is the same for the six subjects in three of the five dimensions (conscientiousness, agreeableness, and neuroticism); the six subjects agree on defining the character as conscientious, disagreeable and neurotic. In contrast, the polarity of openness and extraversion dimensions does not coincide; some subjects define the character as open and extrovert while others do not. If we look to openness and extraversion dimensions in figure 1, we can observe group A scores are over 30 while group B scores are slightly below 30, but the difference is insignificant. In addition, it can be appreciated group B obtained the highest (50) and the lowest (11) results of both groups. These results are obtained in neuroticism and agreeableness respectively. Group A highest result (48) corresponds to conscientiousness while lowest result (18) corresponds to agreeableness. Tendencies regarding gender, age or education of subjects have not been found.

## **7. Discussion**

As I previously mentioned, the model was created from a recompilation of daily life adjectives used to describe someone's personality traits. This may lead to subjectivity since the perception of the qualities measured by the model may vary from one subject to another. Therefore, we would expect a significant variation in the results due to the apparent subjectivity of the model. In spite of this, table 4 shows that results among subjects are highly similar, and bar charts exhibit low dispersion rates. The use of a statement-based questionnaire (instead of a lexical based) may have contributed to this; participants only had to express the accuracy of the facts, and they did not have to assess each correlated adjective. It is striking that closest scores are produced in openness dimension (in group A), since according to McCrae et al. (2012) "openness to experience is the least easily grasped of the five factors (...)" (p. 80). Generally, all subjects tend to coincide in the score range and polarity of each dimension, with no great variations,

especially within the same group. In the last column of table 4, the mean value of the total statistical range is 12,4 points out of 40; if we translate this value into a percentage, the average discrepancy between both groups is just a 31%. Moreover, the percentage is even lower within the same group. The mean value of group A statistical range is 5,6 points out of 40, a 14%; and this value for group B is 8,4 out of 40, a 21%.

As previously indicated, the total statistical range of each dimension does not show significant discrepancies between both groups; however, we should further investigate neuroticism scores. Figure 1 shows group A tends to score slightly higher than group B in all dimensions, except of neuroticism. The most pronounced discrepancy between group A and B occurs in this dimensions (although it is not significant), where this tendency is reversed. Not only that, subject B1 defines the character as extremely neurotic, scoring the highest possible punctuation (50). This inversion could have occurred due to the implications of the neuroticism trait. Generally, the first four traits are associated with positive qualities: A positive score in openness, conscientiousness, extraversion and agreeableness is related to beneficial and advantageous qualities. For instance, openness dimension predicts creativity (Kaufman et al., 2016), conscientiousness is related with academic and professional success (Kertechian, 2018), extroverted people report to be happier than introverted (Pavot et al, 1990), and agreeable individuals are good at problems solving tasks (Stilson, 2005). On the other hand, a positive score in neuroticism is associated with harmful psychological states and negative qualities, as well as clinical mental disorders (Tamir & Robinson, 2004). For instance, Addad et al. (1990) proved a relation between criminals and high neuroticism score. This inversion suggests group A subjects, who had received previous training on the model, are more aware of neuroticism's negative implications. Although this could be the reason of the tendency inversion, the discrepancy is not sufficiently significant since both groups agree on defining the character as highly neurotic.

The standard deviation and statistical range of each group exhibit a remarkable agreement between subjects of the same group, especially in openness to experience, where group A highest and lowest score differ only 2 points out of 40. Previously it is mentioned that a statistical range over 20 points would be significant and, as we can see, all statistical ranges are far below 20. However, both groups exhibit the highest deviation in extraversion and, though in our case a significant disagreement is not produced, some



studies have found inconsistencies and bias in extraversion that could perhaps explain these discrepancies. A recent study carried out by Fleenon and Gallagher (2009) concluded that “there is also a great deal of overlap in how they act: Extraverts quite regularly act introverted and introverts quite regularly act extraverted.” (p. 1110). This suggests extraversion trait may be confusing when measured in questionnaires since an individual can behave as extrovert or introvert depending on the situation. Trofimova (2014) found evidence of sociability bias, especially in extraversion trait, since descriptors used to measure the trait are more focused on social than on mental behavior. Little (2008) discussed free traits and his study indicated that individuals occasionally do not act according to their first nature in order to advance strategically on their personal projects. This may be the case of Walter, he is a controlling individual who changes his behaviour and attitude depending on the situation; this suggests that the model is able to measure the character’s ambiguity. Moreover, it is important to bear in mind that these investigations derived from the exploration of real people, and it does not mean they can be applied to fictional characters. Nonetheless, it is clear that the concept of extra/introversion is complex and it does not appear to be intuitive; consequently, this would explain the discrepancies among subjects when defining the present character.

In relation to the agreement among subjects of the same group, it is important to notice that group A displays a slightly higher agreement than group B in all traits (even though subjects among group B strongly agree too). This suggests that the previous formation increases the possibilities of concordance among subjects. Group A has carried out the experiment (unconsciously) using a deductive process: Subjects trained in the big five model constructed a mental scheme, and this scheme was subsequently used to interpret sensitive data derived from the episode and the questionnaire. Following this reasoning, it seems logical that group A shows more consistent results since all subjects of the group have received the same training information and they all have the same reference model. In this case, the relevant conclusion is that, although group A and group B followed different reasoning (deductive and inductive respectively), they reached to similar results, which reinforces the assertion that the big five model is an effective tool.

According to facets and correlated trait adjectives (see table 1), both groups agree on defining Walter as moderately curious, imaginative, artistic, with wide interests, excitable and unconventional (except for one subject who perceives Walter as lower on

these qualities). In addition, both groups define the fictional character as highly efficient, organized, careful, thorough, active and not impulsive. In the third trait (extraversion), half of the subjects agree on defining Walter as moderately sociable, forceful, energetic, adventurous, enthusiastic and outgoing; and the other half expressed that the character does not possess these qualities. Walter lives a double-life. While Heisenberg is energetic, adventurous, daring and intense, Mr. White is boring and withdraw; but the spectator does not know if Heisenberg represents his real personality or it is just an alter ego. No wonder there is a diversity of opinions in this trait; the character has two almost opposite personalities that differ widely concerning the assertiveness concept.

According to low in agreeableness correlated adjectives, both groups describe Walter as low forgiving, compliant, warm, understanding, modest, and sympathetic. Finally, both groups coincide in defining Walter as highly tense, irritable, depressed, shy, moody, and vulnerable. The big five allows for a comprehensive and highly satisfactory character description. If we would like to perform an exploration of a character using the big five personality inventory, once we obtain the results, we could search for supporting instances of the character's behavior of each trait correlated adjective.

## **8. Limitations of the experiment and future research**

The sample of the experiment could represent a limitation. The results of the experiment are not decisive due to the low number of participants; therefore, I recommend increasing the sample for future experiments in order to obtain conclusive results. Regarding participants, it is important to mention a couple of limitations. I have not taken into account language inconsistencies. Participants are Spanish native speakers with basic English knowledge, they watched the Spanish version of the episode, but they performed an English version of the questionnaire. Five out of six participants communicated me to have problems with the understanding of some questionnaire items. The problematic statements were item five ("get chores done right away"), item nineteen ("is often down in the dumps"), and item thirty-six ("seldom feels blue"). Piedmont and Chae (1997) investigated the cross-cultural generalizability of the big five Inventory and they demonstrated non-native English-speakers have difficulties to understand colloquial statements included in the NEO PI-R. There are two options to avoid this limitation for future experiments: Choose participants with a high level of English, or, utilise a Spanish

statement-based questionnaire. There is a big amount of English big five questionnaires, however it is not easy to find a questionnaire in Spanish language. After the completion of the experiment, I have found only one statement-based questionnaire in Spanish that proves reliability in Spanish population (Benet-Martínez & John, 1998). There is no evidence that this linguistic inconsistency influences the results, nevertheless, it would be important to avoid it in future experiments.

The familiarization of the participants with the television series was another factor not taken into account. Perhaps some participants had prior knowledge of the series and the character and, although in our study there is no evidence that this bias influences the results, it would be interesting to test these two conditions. Regarding this, it would be interesting to carry out a future experiment to measure the latency of the subjects. This interesting research would provide us with more evidence about the utility of the application of psychological models to the literary analysis.

Even though the model has proved its feasibility, we could expand our exploration incorporating the dark triad traits to the analyses of our character, especially if we are dealing with antiheroes and villains. The dark triad traits explore personality qualities such as pride, egotism, manipulation, and impulsiveness, and it is not hard to find articles that investigate correlations between the big five model and the dark triad. For instance, Chung (2017) provides us a table with the positive, negative or non-existent relations between dark triad and big five traits. Looking at the table, we discover Walter could be a narcissist and, with less probability, machiavellian, but, definitely, he is not a psychopath.

I would like to conclude this section proposing a future research regarding HEXACO and dark triad. Some researchers have reported the efficiency to combine these two models to explore individual's characteristics, since HEXACO provides a comprehensive understanding of the characteristics of dark triad personalities (Lee & Ashton, 2005), and a low score on honesty-humility trait is associated with positive scores in narcissism, Machiavellianism, and psychopathy (Ashton & Lee, 2005). Therefore, it would be interesting to assess the reliability of HEXACO and dark triad combined to explore fictional characters and compare the results with the present research. It is

important to notice that, apart from the big five personality model, there exist other models that could result useful for the analysis of fictional characters too.

## **9. Conclusion**

This dissertation has achieved its purpose to prove the reliability of the big five model when applied to the analysis of filmic characters. In addition, this study has provided other conclusions that will help us to carry out future investigations and improve the application of the big five model to explore fictional characters. Respecting research question one, we conclude that the model provides a satisfactory and comprehensive analysis of fictional characters' qualities, and the big five personality inventory is a valid and effective tool to measure these qualities. Respecting research question two, we conclude that the model is highly intuitive since its effectivity is almost the same in subjects with or without prior knowledge of the five dimensions; all experiment participants agree on the definition of Walter and the deviation of the scores is insignificant. Nevertheless, we noticed that prior knowledge of the model may slightly increase the agreement among participants. Results have exceeded our expectations since Walter is a complex and ambiguous character and in spite of this, the model has greatly proved its reliability. Furthermore, it is clear that the use of personality measuring models to explore characters offers a beneficial systematic approach and an easier understanding of fictional characters' personality.

## **10. Acknowledgement**

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## Appendix

### Questionnaire

Table A1

*Questionnaire handed to participants*

Instrucciones: Completa el siguiente cuestionario como lo haría Walter White, asumiendo que este contestase con total sinceridad.

<b>Walter White...</b>	<b>Very inaccurate</b>	<b>Moderately inaccurate</b>	<b>Neither inaccurate nor accurate</b>	<b>Moderately accurate</b>	<b>Very accurate</b>
1. Pays attention to details.	1	2	3	4	5
2. Has little to say.	5	4	3	2	1
3. Feels comfortable with himself.	5	4	3	2	1
4. Tends to vote for liberal political candidates.	1	2	3	4	5
5. Gets chores done right away.	1	2	3	4	5
6. Dislikes himself.	1	2	3	4	5
7. Procrastinates and wastes time.	5	4	3	2	1
8. Respects others.	1	2	3	4	5
9. Feels comfortable around people.	1	2	3	4	5
10. Is very pleased with himself.	5	4	3	2	1
11. Makes friends easily.	1	2	3	4	5
12. Does not like to draw attention to himself.	5	4	3	2	1
13. Believes in the importance of art.	1	2	3	4	5
14. Avoids philosophical discussion.	5	4	3	2	1

15. Accepts people as they are.	1	2	3	4	5
16. Does not see things through to the end.	5	4	3	2	1
17. Has frequent mood swings.	1	2	3	4	5
18. Does just enough work to get by.	5	4	3	2	1
19. Is often down in the dumps.	1	2	3	4	5
20. Enjoys hearing new ideas.	1	2	3	4	5
21. Is the life of the party.	1	2	3	4	5
22. Would describe his experiences as somewhat dull.	5	4	3	2	1
23. Tries to get back at others who have hurt him.	5	4	3	2	1
24. Tends to vote for conservative political candidates.	5	4	3	2	1
25. Carries the conversation to a higher level.	1	2	3	4	5
26. Keeps in the background.	5	4	3	2	1
27. Rarely gets irritated.	5	4	3	2	1
28. Does not talk a lot.	5	4	3	2	1
29. Panics easily.	1	2	3	4	5
30. Is always prepared.	1	2	3	4	5
31. Finds it difficult to get down to work.	5	4	3	2	1
32. Has a vivid imagination.	1	2	3	4	5
33. Suspects hidden motives in others.	5	4	3	2	1



34. Has a good word for everyone.	1	2	3	4	5
35. Is not interested in abstract ideas.	5	4	3	2	1
36. Seldom feels blue.	5	4	3	2	1
37. Has a sharp tongue.	5	4	3	2	1
38. Does not enjoy going to art museums.	5	4	3	2	1
39. Often feels blue.	1	2	3	4	5
40. Shirks his duties.	5	4	3	2	1
41. Does not like art.	5	4	3	2	1
42. Is skilled in handling social situations.	1	2	3	4	5
43. Believes that others have good intentions.	1	2	3	4	5
44. Makes plans and sticks to them.	1	2	3	4	5
45. Knows how to captivate people.	1	2	3	4	5
46. Is not easily bothered by things.	5	4	3	2	1
47. Insults people.	5	4	3	2	1
48. Makes people feel at ease.	1	2	3	4	5
49. Carries out his plans.	1	2	3	4	5
50. Puts other people down.	5	4	3	2	1

*Note.* Adapted from Ambridge, B. (2014). *Psy-Q: You know your IQ – now test your psychological intelligence.*

Table A2

*Score instructions*

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To find your score for openness to experience, add together your scores for

4	13	14	20	24	25	32	35	38	41
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To find your score for conscientiousness, add together your scores for

1	5	7	16	18	30	31	40	44	49
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To find your score for extraversion, add together your scores for

2	9	11	12	21	22	26	28	42	45
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To find your score for agreeableness, add together your scores for

8	15	23	33	34	37	43	47	48	50
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To find your score for neuroticism, add together your scores for

3	6	10	17	19	27	29	36	39	46
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*Note.* Extracted from Ambridge, B. (2014). *Psy-Q: You know your IQ – now test your psychological intelligence.*