

https://dspace.org/

Exploring language bias in the NEO-PI-R

Franklin, Dee Ross

2010-03-08T06:49:14Z
http://hdl.handle.net/10539/7636

Downloaded from a DSpace repository. https://dspace.org/

Exploring language bias in the NEO-PI-R

By Dee Ross Franklin

Supervised by Sumaya Laher

A dissertation submitted to the Faculty of Humanities

University of the Witwatersrand

In fulfillment of the requirements for the degree

Masters of Arts in Psychology by Dissertation

January 2009

To my husband, my parents, my sister
And all my family in South Africa, whom I love.
Eternally yours in a toast to our close bond,
With boerewors rolls and champagne!

Abstract

The study explores language bias in the NEO-PI-R both quantitatively and qualitatively. A sample of 28 postgraduate psychology student volunteers completed a questionnaire containing the NEO-PI-R and two open-ended questions about the instrument. These responses were then analysed across English first language and second language speakers to explore issues of bias. Reliability of the NEO-PI-R appeared to be robust at a domain level. The reliability of the facets, while appropriate for the most part, still yielded low alpha coefficients for the Excitement-seeking, Actions, Values and Straightforwardness facets. ANOVA's at the domain and facet scale levels indicated no significant differences across home language. However ANOVA's at the item level yielded 33 in total that were problematic, comprising of 12 items that were significant at the 5% level of significance and 21 items at the 10% level of significance. These items were primarily from the N and E domains. Thematic analysis of the open-ended questions of the questionnaire indicated 26 items were difficult to understand and/or inappropriate for the South African context. These items were primarily from the E and A domains. From the original sample of 28 volunteers, two focus groups were formed, comprising of volunteers from the initial sample. The focus groups explored several qualitative issues, including concepts of personality, language and culture and the applicability of the NEO-PI-R for South African user groups. It was perceived that there is a presence of American socio-cultural references within the use of language, grammar and socio-cultural context in the instrument. Thus the results show evidence of language bias in the NEO-PI-R, and subsequently identify particular aspects and items of the instrument that are especially problematic for a South African user group. The present study suggests that the NEO-PI-R would need to be revised to suit the South African context by changing the problematic items.

Key words: bias, culture, Five-Factor Model, language, NEO-PI-R, personality

Declaration

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Arts in Psychology by Dissertation, at the University of the Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any other degree or examination at any other university.

_____

Dee Ross Franklin

_____

Acknowledgements

My sincere thanks and appreciation go to Sumaya Laher for invaluable support and guidance in the process of completing my research. I am so grateful to have met and worked with a consummate professional such as you. You assisted me through the entirety of this journey, *with all of its obstacles*, geographical, logistical, and familial in nature. What a challenge for us both! I have really enjoyed your interest and enthusiasm for my topic. I could not have done this without you, and I could not have asked for more patience, dedication and perseverance than you showed me. I wish you all the very best for your continuing research on the NEO-PI-R, and of course health, happiness and prosperity for you and you family in the future.

To Mike Greyling for assisting me in the final hours before I left for the U.S.A. I will always appreciate your flair for interpreting data. Thank you for the help.

Professor Gillian Finchelscu; thank you for your hard work, administration, planning and correspondence for the duration of the M.A. course. I will always appreciate your willing and supportive attitude towards my dissertation-by-distance! Thank you very much.

Thank you to Robert Diaz for helping me centre myself within the greatest life-challenge I have yet faced. Without your guidance and care I am not sure I would have found the sunbeam I thought I'd lost. Thanks to you and the self-searching you encouraged me to do, I've got a bounce in my step again!

Tau, I will always love you, and I'm sorry I wasn't there when you passed on.

My sister Kim; you are an inspiration, and I truly admire you and all of your achievements. Your support and encouragement was needed so many times! I now know just how tough it is to study, work, clean the house, cook, shop, exercise, do the laundry and find time to either sleep, relax or romance my husband! Thank you for the words of wisdom throughout the years. I really miss you being all the way over here, and

I still dream about the day when a visit with you will be just a few moments away. You're a role model and a true friend. I know I can always count on you. I love you so much, thanks for everything Sis.

With deep love and affection to my wonderful husband, Ryan. Thank you for all the inspiration and encouragement over the past two years, and for making the idea of this M.A. a possibility within reach. Ry, you have been a remarkable and mindful partner, with insight beyond words. Although there have been too many tough times and hairy-scary endeavours over the past two years, somehow we still found time to nurture our love, no matter what. Thank you for always being there for me to share the laughter, the tears and the celebrations. I hope I can show you how much love and gratitude I have in my heart and how happy I am to have you as my husband and my best friend. I am so proud of you now that you have finished your thesis too! I am looking forward to your most auspicious PhD graduation. I love you more than I understand; hopelessly devoted! As we always say, I'd rather be doing nothing with you, than anything with anybody else.

So importantly, Mom & Dad, how can I thank you enough for everything that you do for me? You always love and support me unconditionally. Thank you for 'rooting' for me all the way and providing in every possible shape and form. Thank you for believing in me and trusting that I would achieve this accolade. If I look deeply into the palm of my hand, I see you, Mom & Dad. You are alive with me in this moment, and in everyday, no matter how far away you may be. Each of you is present in every part of my body, and I am proud to be a continuation of two such incredible people. I love you both so much. How I have missed you over these two years.

Table of Contents

List of tables **1**

List of figures **2**

Foreword - *Dee Ross Franklin* **3**

Introduction to the Study **4**

Chapter 1 Theoretical Foundations of Personality Assessment and the NEO Personality Inventory 8

1.1 An introduction to research on personality assessment 8
1.2 The trait approach to personality 11
1.3 A brief history of the trait approach 13
1.4 The Five-Factor Model of personality (FFM) 16
1.5 The Five-Factor Model and the importance of 'National Character' 19
1.6 The Five-Factor Theory (FFT) 22
1.7 The NEO Personality Inventory 23
1.8 Cross-cultural research on the NEO-PI-R and the replication of the FFM 25

Chapter 2 Bias and equivalence in the South African context 29

2.1 A description of bias 30
2.2 A description of equivalence 35
2.3 Bias and equivalence in the South African context 37

Chapter 3 The contextual dynamic of personality, culture and language 41

3.1 Introduction 41
3.2 Conceptualising culture 42
3.3 Comparative and supporting research for a multicultural study 46

Chapter 4 Methods 55

4.1 Research Aims 55
4.2 Rationale 55
4.3 Research Questions 56
4.3.1 Quantitative research questions 56
4.3.2 Qualitative research questions for the open-ended questionnaire 56
4.3.3 Qualitative research questions for the focus group discussions 57
4.4 Hypotheses 57
4.4.1 Quantitative hypothesis 57
4.4.2 Qualitative hypothesis 57
4.5 Sampling 58
4.5.1 Role of a student population 58
4.5.3 Quantitative phase 59
4.5.4 Qualitative phase 62
Open-ended questionnaire 62
Focus groups 62
4.6 Instruments 63
4.6.1 Quantitative phase 64
Demographic section 64
NEO-PI-R 64
Reliability of the NEO-PI-R 65
Validity of the NEO-PI-R 65
4.6.2 Qualitative phase 66
Open-ended questionnaire 66
Focus group 67
4.7 Research Design 67
4.7.1 Quantitative phase 68
4.7.2 Qualitative phase 68
Open-ended questionnaire 68
Focus group discussions 68
4.8 Procedure 69

4.8.1 Quantitative phase 69
4.8.2 Qualitative phase 70
4.9 Ethical Considerations 72
4.10 Data Analysis 73
4.10.1 Quantitative phase 73
Descriptive statistics 73
Reliability co-efficients 74
One-way analysis of variance 74
4.10.2 Qualitative phase 74
Open-ended questionnaire 75
Focus group discussions 75

Chapter 5 Results and discussion 77

5.1 Introduction 77
5.2 Quantitative phase 77
5.2.1 Descriptive Statistics 77
5.2.2 Reliability Analysis 79
5.2.3 One-Way Analysis of Variance (ANOVA) – scale level 84
5.2.4 One-Way Analysis of Variance (ANOVA) – item level 84
5.3 Qualitative phase 89
5.3.1 Qualitatively Problematic Items 89
5.3.2 Thematic content analysis of open-ended questions 92
5.3.3 Thematic content analysis of focus group discussions 99
Theme one: An understanding of personality 99
Theme two: Unique South African culture that influences Personality 101
Theme three: Language and personality 112
5.4 Specific problems relating to the NEO-PI-R 124
5.5 Integrative discussion of the results 131

Chapter 6 Limitations, Recommendations and Conclusions 140

6.1 Introduction 140

6.2 Limitations 140

6.2.1 Conceptual limitations 140

6.2.2 Methodological limitations 141

6.3 Recommendations for future research 144

6.4 Conclusions 146

Reference List 148

Appendices

Appendix A NEO-PI-R Personality Domains and Facets 152

Appendix B Research Permission Form 154

Appendix C Participant Information Sheet (Quantitative phase) 155

Appendix D Demographic Questionnaire 156

Appendix E Participant Information Sheet (Qualitative phase) 159

Appendix F Informed Consent (Focus group) 160

Appendix G Informed Consent (Video Recording) 161

Appendix H Informed Consent (Confidentiality) 162

Appendix I Focus group Question Guidelines 163

Appendix J ANOVA's at an item level 164

Appendix K Review of problematic items 167

List of Tables

Table 4.1	Quantitative Sample Descriptive Statistics	60
Table 4.2	Qualitative Sample Descriptive Statistics	63
Table 5.1	Descriptive Statistics for the NEO-PI-R domain and facet scales	78
Table 5.2	Reliability Analysis for domain and facet scales of the NEO-PI-R	80
Table 5.3	ANOVA's by domain scale level	85
Table 5.4	Problematic items from a quantitative perspective	87
Table 5.5	Problematic items from a qualitative perspective	91
Table 5.6	Emerging themes from open-ended question 1	93
Table 5.7	Emerging themes from open-ended question 2	96
Table 5.8	Focus Group Coding	99
Table 5.9	Theme 1: An understanding of Personality Emerging themes from thematic cluster one	100
Table 5.10	Theme 2: Unique South African culture that influences personality Emerging themes from thematic cluster two	101
Table 5.11	Theme 3: Language and personality Emerging themes from thematic cluster three	112
Table 5.12	Specific problems relating the to the use of the NEO-PI-R	125

List of Figures

Figure 1.1	A traditional trait approach with an ‘indigo-cultural’ Perspective	13
Figure 1.2	Five-Factor Theory	23
Figure 2.1	Categories of bias	31

Foreword

A personal experience, I believe, is almost always a testimonial to a level of truth. To the observations that have been made throughout this study, perhaps the most valuable experience to contribute to my understanding of the NEO-PI-R's appropriateness in South Africa, is having lived in the United States for 18 months. I was able to notice with immaculate clarity and first-hand experience, just how differently South Africans speak English compared to Americans. As a new resident in the United States the challenges I faced on a language basis alone were enormous and very much unexpected. Plainly, it was very stressful to communicate. I found that I inhibited myself verbally because of the unknown, and astoundingly the unknown is a culture that speaks the same language that I do. Many times I felt misunderstood and misrepresented, as though I was speaking a foreign language. However, what has become apparent to me in this challenging climate is that the South African persona is expressed through the vehicle of language. Thus, the language itself is tinted by the socio-cultural situatedness of the people as well as the qualities and characteristics that we share as a people. I now appreciate that South African English has a unique flavour, unlike anything else in the world of familiar English, so to speak. In many ways, I became the living subject of my own study.

These personal expressions and experiences therefore became a part of this study and helped to develop a unique *insider's perspective* during the analysis and discussion phases. In a sense my understanding of culturally appropriate psychometrics in South Africa, and the NEO-PI-R in particular, has became deeper and closer to the human realm, in which I have become even more aware of how moving culture and language can be and how it influences thought, communication and understanding. Ultimately, the value of this experience has been decanted, with a great deal of personal and professional integrity, directly into this study.

Dee Ross Franklin

January 2009

Introduction to the Study

Human nature is similar at birth; our habits make us seem remote
- From the *San Zi Jing*

Within the borders of our diverse country is a cultural milieu that is fondly depicted as an integrated whole. Epithets such as 'ubuntu' or 'simunye' seek to describe shared systems of meaning and a sense of shared belonging amongst our peoples (Eriksen, 2001). There also exist scores of variations between local groups, and then several more when we cross a border. These variations amongst people create a contextualised social fabric, which is simultaneously rich with similarity, difference, uniqueness and ubiquity. We call this a culture, and it is these cultures that collectively constitute a national identity. Therefore, it may be these factors that cultivate a distinct texture, shape and quality about an individual's personality. Indeed, human nature may seem a similar or common phenomenon, but our national and cultural capital, our heritable habits, makes us unique.

To this end researchers in the social sciences are still trying to resolve the problem of conceptual equivalence in order to deal with these cultural variations in personality (Marsella, Dubanoski, Hamanda & Morse, cited in Wallis & Birt, 2003). The argument suggests that because culture and language are inextricably joined, and because culture shares a distinct interrelatedness with personality structure, the three create a powerful dynamic, which has significant implications for assessing personality in a particular context. Many personality inventories, such as the NEO-PI-R, are currently still in use in South Africa in their original forms. This is problematic because the NEO-PI-R was "developed and standardised within a Western cultural setting" using an American normative population (Wallis & Birt, 2003, p.182). This inevitably brings serious consequences to the fore when considering the appropriateness of the NEO-PI-R on multicultural South African audiences. Notwithstanding the numerous cultural differences between an American normative population and a South African test population, there exist several motivations for considering the appropriateness of the NEO-PI-R

for a South African audience. The central motivation of this study is language; one simply cannot avoid the issue of how easily a language, such as English, can be contextualised and more importantly, the issue of administering an English assessment to South Africans with non-English home languages. In other words, just because Americans, Brittons, Australians and most South Africans speak and understand English, it does not mean all English is identical. There exist intricate differences, contextualised words and understandings, as well as differing tones and sentence structures, in spite of the fact that English is not always a home language (Berry, Poortinga & Pandey, 1997).

Local and international research has consistently demonstrated how taking a test in a language that is not ones home language, or a language in which one is not necessarily proficient affects responses to test items (Abrahams, 1996; Abrahams & Mauer, 1999; Allik & McCrae, 2002; Heaven & Pretorius, 1998; Heuchert, Parker, Stumpf & Myburgh, 2000; Horn, 2000; Piedmont, Bain, McCrae & Costa, 2002; Wallis & Birt, 2003). Succinctly, the advanced level of language and abstract systems of meaning, as well as Western cultural nuances that are inherent in Westernised instruments may not be understood by many South Africans. Further, this content may it be received as inappropriate, confusing or ill-fitting. Increasing awareness of this problem, particularly in the South African context, has drawn attention to a number of instruments, such as the NEO-PI-R, the 16 Factor Personality Questionnaire (16PF), the 15FQ personality test (Abrahams, 1996; Meiring, 2007). Researchers have argued that instruments must be utilized in a fair, unbiased and cross-culturally equivalent manner (Abrahams & Mauer, 1999; Laher, 2008; Prinsloo & Ebersöhn, 2002; Van Eeden & Prinsloo, 1997). Hence, a plenitude of international research has focused its energies towards investigating the appropriateness and applicability of certain Westernised personality instruments (Allik & McCrae, 2002; Berry, Poortinga, & Pandey, 1997; Cheung, Cheung, Zhang, Leung, Leong, & Huiyeh, 2008; Church, & Katigbak, 2002; McCrae, & Terracciano, 2005). In the chapters to follow, this study focused on investigating the issues of language bias in the NEO-PI-R and ultimately its appropriateness for a multicultural South African audience.

In chapter one the study begins by presenting the relevant and prominent theoretical discussions on personality assessment and the NEO-PI-R. This section centres itself around a detailed and

progressive discussion on the Five-Factor Model of personality and goes on to consider the arguments put forward by McCrae and Costa (McCrae, 2000) for the Five-Factor Theory. As part of an extensive literature review, these theoretical assumptions are supported, challenged and elaborated upon by integrating them with leading contemporary research in the field of personality assessment, important historical research as well as milestone studies from the South African context over the past decade. Chapter one constitutes the theoretical foundation upon which this study is built. It also provides a steady launch into issues of cultural equivalence in testing, the impetus of home language on testing, as well as the pivotal notions of bias and equivalence within testing.

Chapter two unpacks the concepts of bias and equivalence from a theoretical standpoint, therefore providing concise and inclusive descriptions of the terms by using various bodies of research as a vehicle of explanation. As an integral focus of this study, bias is explained and explored through the use of research examples in the South African context to reach the concept of language bias (also known as lingual bias). Chapter two extends this discussion by paying exclusive attention to contemporary, local examples of research dealing with this topic.

Chapter three introduces the themes of culture and language, and discusses the ways in which aspects of personality are profoundly affected and intercepted by socio-cultural forces. The chapter highlights an implicit awareness to the level of sensitivity that is required when researching personality psychology in general, and in specific, the South African context, and launches several discussions that are important in light of the results and discussion chapters (chapter five and six respectively).

In chapter four the research methods are presented alongside supportive concepts, such as multicultural applicability of Western instruments, the use of student samples, reliability and validity of the instrument. During each portion of the methods chapter, the quantitative phase and the qualitative phases are set out separately and for the sake of clarity, discussed in relative isolation of each other, although in the chapters to follow the phases go through a degree of overlap. Chapter four enables the reader to access and get an acute sense of the methodological aspects of the study. Within the methods section are discussions on the research aims and

rationale, the research questions and hypotheses, the sample and the instruments used, the research design and the procedure, ethical considerations and finally data analysis.

Chapter five is a logical progression from Chapter 4, in which the actual data finds expression through quantitative analysis and qualitative evaluation. The presentation of the results chapter follows a similar pattern to that of the methods chapter, whereby the results for the quantitative phase and the qualitative phases are discussed separately. Using the resultant data, obtained and analysed both quantitatively and qualitatively, chapter five flows into a discussion that is guided by the cultural and lingual dynamics of personality assessment, and focuses on the possible elements of bias and cross-cultural comparability of using the NEO-PI-R on a South African audience. Although the discussion chapter is laid out in separate quantitative and qualitative sections (as are the previous chapters), careful and cognisant attention is devoted to overlap and integrate the significant aspects of the discussion, thereby highlighting the chief themes and critical, key points from the research results.

This study culminates in a concluding chapter in which the research is briefly reviewed and evaluated for limitations and recommendations. It is hoped that the findings of this study will influence and contribute to the emergence of a well-defined representation of personality perspectives in South Africa, and more specifically, the emergence of a culturally and lingually appropriate personality-testing medium.

1

Theoretical Foundations of Personality Assessment and the NEO Personality Inventory-Revised

1.1 An introduction to research on personality assessment

Amongst the plethora of theory and research on personality assessment that is available, Paul T. Costa and Robert McCrae's (1992) NEO-PI-R is amongst the most dominant in the field because of its foundations in the Five-Factor Model of Personality (FFM). After the development and success of the NEO-PI-R many personality inventories similarly laid their foundations upon the robust qualities of a factor model of personality, and the idea of there being a basic personality template for human beings. Over the years, while many of these inventories have captured the interest of international translation, adaptation and furthered research, arguably none has been scrutinised as extensively as the NEO-PI-R (Costa & McCrae, 1992; McCrae, 2000).

These research efforts can be roughly divided into two main categories, namely emic and etic studies (Berry, cit. in Rolland, 2002). The emic approach aims at discovering cultural specifics (concepts, beliefs, values, practices, norms and so on) by gathering rich lingual material in that culture. The etic approach by comparison, aims at identifying whether the concepts and constructs from a particular culture can be found in a different context and in a different culture, thereby attempting to discover universals. While both approaches have been widely and favourably pursued, authors whose interests lie in non-Western societies have suggested an integrated approach, whereby cross-cultural universals and cultural specifics can be identified (Heuchert et al., 2000; Laher, 2008; McCrae, 2002a, 2002b; Piedmont et al., 2002; Prinsloo & Ebersöhn, 2002; Rolland, 2002; Yang & Bond, 1990).

The imposed etic or pseudo-etic approach to personality research and assessment assumes the universality of constructs and allows for cross-cultural comparison, and should not be confused with the integrated approach, which is more focused on the cultural specifics of the emic variables. The reasoning behind the use of instruments such as the NEO-PI-R in cross-cultural research and personality assessment is due to the extensive research using pseudo-etic approaches. For instance, using the NEO-PI-R McCrae and Terraccianno (2005) combined data from 36 cultures, incorporating 11 different language families across 5 continents, and employed an imposed etic approach towards studying the replication of the five personality factors across cultural groupings. However, there is also support for the alternative approach, whereby the more recent research on personality assessment that is now available appears to employ an integrated approach. For instance, Cheung, Cheung, Zhang, Leung, Leong and Huiyeh (2008) used the Chinese Personality Assessment Inventory (CPAI) in a combined emic-etic approach to generate six culturally relevant Openness scales. Essentially, Cheung et al. (2008) developed the CPAI to assess Chinese personality from an indigenous perspective. These measurements were not only culturally relevant, but were also of comparative value because they were derived using Western assessment standards; this is an integrative approach. Interestingly, three out of four CPAI scales corresponded very well with four NEO-PI-R personality facets (N, E, A & C), but were plainly very much more culturally appropriate.

What has become evident over the past 15 years is the success of the integrated approach. There has been a great deal of expertise invested in the structure of personality across non-Western cultures, and to date these studies have focused on the role of natural language, indigenous personality constructs and non-western cultural influences (Cheung, Leung, Zhang, Sun, Gan, Song & Xie, 2001; Cheung et al., 2008; Church & Katigbak, 2002; Yik & Bond, 1993). These researchers have utilized East Asian cultures with overwhelming success, however, research of this nature in Africa is lacking. What has been enthusiastically initiated in South Africa quite recently, by South Africans, is a steady growth of localised research on several Western instruments, such as the NEO-PI-R. In support of this growing body of literature, is the suggestion that the FFM may not necessarily be a complete description of personality outside of Western contexts. Not surprisingly, the recent literature suggests that a potential sixth factor exists that is not accounted for by the FFM, and that this factor is

Individualism/Collectivism, and is commonly lived-through non-Western communities (Cheung et al., 2008; Gill & Hodgkinson, 2007; Vogt, 2009). Thus, there is abundant concern about an exclusively etic approach to personality in a multicultural setting such as South Africa, because emic or culture-specific constructs could remain untapped. Importantly, the continued use of imported measures based on Western constructs of personality is thought to limit users, as they may not be culturally relevant in diverse cultures (Church & Katigbak, 2002).

In light of these claims, there is a small, but growing body of literature applicable to Southern African regions that suggest that the FFM is not wholly applicable in non-Western contexts, because an examination of the available research suggests robust universality of the FFM (Allik & McCrae, 2004; McCrae & Terraccianno, 2005). Therefore there is a need for supportive research that would ratify the suggestions about non-Western personality constructs, and the potential inappropriateness of the FFM, and therefore the NEO-PI-R, in non-Western communities such as South Africa. Many studies using the NEO-PI-R in cross-cultural situations have shown that variations in the five factor structure between Western and Asian cultures exist (Piedmont, Bain, McCrae & Costa, 2002). McCrae (2002a) has purported that is the likely consequence of the differences between the individualistic societies of the West and the collectivist societies of non-Western communities.

Contemporary South African research is now questioning the value and purpose of using etic (developed in a Western cultural setting) instead of emic (developed locally) psychometric instruments (Abrahams, 1996; Laher, 2008; Vogt, 2009). However, a definite lack of research to support these claims indicates that there is a need to conduct further detailed research on psychometric issues in South Africa. Furthermore, psychological instruments in general, and personality inventories in particular, are developed upon the foundations of a theory; in the case of the NEO-PI-R the theoretical foundation is the Five Factor Model of Personality. However, the primary problem with this theoretical tradition is that most of the theories are couched within a Westernised socio-cultural milieu. The present study, as well as recent literature on personality assessment in South Africa, calls for continued research into etic instruments and most importantly into the theories that underlie these instruments (Foxcroft & Roodt, 2005).

Contemporary researchers need to begin looking at multicultural perspectives for appropriate psychometry in South Africa.

Whilst considering the need for multicultural perspectives, it is important to take cognisance of the fact that the NEO-PI-R is an etic measure, and it is plausible that certain items may be inappropriate for, and not properly understood by a multicultural South African audience. Of equally important value, one must acknowledge that lingual similarity does not imply cultural similarity (Hřebičkova, Urbanek, Čermák, Szarota, Ficková & Orliká, 2002). This means that even though the NEO-PI-R is an English-medium assessment of personality, one cannot assume that Americanised English will be appropriate for English-speaking South Africans, or for South Africans for whom English is a second (or third) language. However, in South Africa there may also be a number of socio-economic and political reasons as to why a more appropriate instrument is not available as yet. Van der Vijver and Rothman (2004) argue that the 1998 Employment Equity Act creates a daunting task[1], as it assigns the sole responsibility of demonstrating the adequacy of psychometric instruments to psychology as a profession. In addition to this, a lack of resources, scarce multicultural expertise and limited empirical research being conducted to support the arguments, highlights the intimidating task. However, it also creates a unique opportunity for South Africans. It can only be through the bright light of need, that research is perpetuated forward. It is by this determination that instruments such as the NEO-PI-R will receive localised scrutiny. The ultimate fruition of these research efforts depends wholly and integrally upon one's understanding of the theoretical orientations of the NEO-PI-R; that is, that it is located within the trait approach to personality and is situated upon the Five-Factor Model of Personality.

1.2 The trait approach to personality

The trait approach to personality identifies the intrinsic qualities and/or personal characteristics (traits) that are present within the individual. These traits are thought to form the shape of the individual personality, and can subsequently be defined as relatively stable or enduring individual differences in thoughts, feelings and behaviours (Larsen & Buss, 2005). This means

[1] Detailed discussion will follow in Chapter 2 regarding the Employment Equity Act (1998)

that trait theorists view the individual personality as a unique manifestation, formed from the basis of what is intended to be a universal trait template; this approach is known as a *universalist* perspective. The essential components of this 'universal trait template' were derived from "analyses of the natural-language terms people use to describe themselves" (Laher, 2008, p77). Therefore, the trait approach can be thought of as the traditional outlook in personality research.

These days, it seems more sensible to incorporate new and persistent sensitivity towards cultural and lingual factors, in an effort towards culturally appropriate applications of the trait perspective and personality assessments as a whole. Church and Katigbak (2002) explored several different theoretical perspectives on personality and culture, in an article investigating personality structure amongst locals in the Philippines. The authors outlined the trait perspective as the vehicle of traditional personality theory, and then described indigenous and cultural perspectives as alternatives. Church and Katigbak (2002, p.130) state "the indigenous perspectives of personality tend to be skeptical about the relevance of imported personality theories, methods, constructs and measures…[and] they emphasise instead the development of psychologies that are rooted in the experiences, ideas and orientations of indigenous cultures". This is of direct relevance to the present study, in which an extremely similar philosophy is applied; the ultimate question to be addressed is whether the NEO-PI-R is an appropriate measure and whether the FFM is an appropriate construct to be used in South Africa. The cultural perspectives according to Church and Katigbak (2002) emphasise the mutually constitutive nature of culture and personality, meaning that each concept is constructed within the other. The cultural perspective claims that personality can only be understood appropriately and meaningfully when it is described inclusively alongside culture. This approach to personality is equally important to the present study because the South African socio-cultural milieu is very diverse, and requires inclusion to any construct of person or behaviour. In other words, as South Africans we describe our systems of meaning through culture, and we direct our expressions of the self along a similar route.

The cultural and indigenous perspectives on personality enhance the present study's application of the trait approach, and in many ways, creates the persistent sensitivity towards cultural and

lingual factors that are required these days in personality assessment. In doing so, the reader is cautioned to acknowledge that while the trait perspective may be the prominent exemplar of personality assessment, there are rich contributions to be gained by having a perspective that is sensitive to all approaches. The reason for this cautionary note is the knowledge that not all cultures ascribe to traditional Western paradigms of reason and thought. According to Cheung et al. (2008) studies that are attentive to indigenous and culturally relevant materials address the Westernised limitations of imported instruments, such as the NEO-PI-R. Furthermore, these studies tend to indicate that cultural specificities, when relevantly analysed, may even overlap with the western notions of personality structure, although they do not "carve up the personality space in precisely the same manner" (Church & Katigbak, 2002, p.148). Succinctly, present study identifies with the suggestions of Cheung et al. (2008) and embodies a theoretically inclusive approach. Therefore the researcher's optimal approach to personality assessment is to adopt a pliant attitude towards a traditional trait approach while including a sensitive indigo-cultural perspective (see Figure 1).

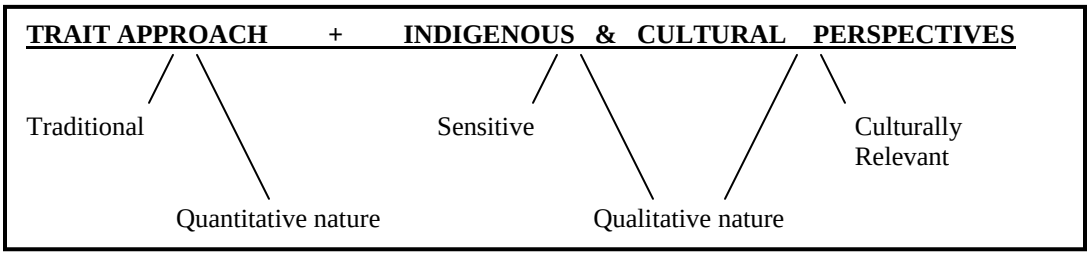


Figure 1.1. A traditional trait approach including a sensitive and relevant 'indigo-cultural' perspective

1.3 A brief history of the trait approach

Over the past 90 years the trait approach has been modelled and modified by several influences (Cooper & Pervin, 1998). As far back as the 1930's the journey towards defining the constituents of human personality had already begun, and continued with unwaned interest into the new millennium. Arguably, the trend throughout this research journey has been the search for ubiquitously common personality categories, and the endeavour to assemble the human personality in such a way that it can be studied, mapped and more fully understood. Early trait theorists such as Allport and Odbert, as well as Cattell (Larsen & Buss, 2005) used lexicons, or

worded glossaries, to find all the terms that were related to personality traits. In 1936, Allport and Odbert had compiled a list of approximately 18 000 words which could be used to describe an individual's behaviour. They divided these words into four alphabetically ordered categories called personality descriptors. The four categories were defined as: 1) personality traits; 2) temporary states, mood and activities; 3) evaluative judgements of personal conduct; and 4) physical characteristics, capacities and talents (Larsen & Buss, 2005). After their success in clustering personality descriptors, Allport and Odbert's personality paradigm asserted that by their procedure "personality becomes an appendage to demography…because it is not the integrated structure within the skin that determines behaviour, but the membership in a group, the person's assigned roles – in short the prevailing situation" (Cooper & Pervin, 1998, p.207). In their studies during the post World War II era, Allport and Odbert's attention to the ways in which situational factors, such as socio-cultural indicators and lived experience, affected the personality descriptors was a vital point of inquiry that was only accessed many years later by the increasing interest into socially and culturally reflexive research (Cooper & Pervin, 1998).

In the late 1940's Raymond Cattell used the worded glossary that Allport and Odbert had created as a guideline with which to begin his own research into the structure of personality (Wallis & Birt, 2003). He created a reduced list of 4 500 words which represented only the stable personality traits (Larsen & Buss, 2005). Cattell used clustering techniques to reduce his original list to 35 variables and through factor analyses a final 12 factors emerged. These 12 factors went on to form the basis of Cattell's 16-Factor Personality Questionnaire (16 PF). The 16PF was initially published in 1949 and has since undergone four revisions to its current form that is still in use today (Abrahams, 1996, 2002; Abrahams & Mauer, 1999).

After the development of the 16PF, several theorists used the Cattell's research as a starting point for personality research. In 1950, Donald Fiske went on to develop a five-factor structure, which used 22 of Cattell's variables to construct a list of basic descriptors (Larsen & Buss, 2005). By the 1960's a personality research had flourished and expanded to a point of clarity; five clearly defined personality factors remained invariant from one analysis to the next. During this time Ernest Tupes and Raymond Christal used Fiske's descriptors in a study that involved the re-analysis of correlations from eight different samples, and again five factors

emerged (Larsen & Buss, 2005). In 1961, Tupes and Christal released a manuscript for publication as part of an ASD Technical Report for the United States Air Force, which asserted that there existed five well-defined personality factors, and that the evidence supporting a five-factor trait structure was sufficient to stimulate a great deal of future research (Cooper & Pervin, 1998).

Subsequent studies by Norman during the early 1960's produced conclusions akin to the support of a five-factor structure of personality, by using lists derived from Cattell's 35 variables, in which Tupes and Christal's original five factor structure was replicated (Goldberg, 1990). These five factors were to become known in later years as the 'Big Five' (Goldberg, 1990; Laher, 2008; McCrae & Allik, 2002). From the active research of the 1960's followed a period of dormancy that characterised personality research on the Five-Factor structure during the late 1970's and early 1980's (McCrae & Allik, 2002). However, research enthusiasm and interest was reawakened during the mid-1980's when studies showed factor structures resembling the five factors (Piedmont, 1998). These studies were once again based on Cattell's 35 variables, which raised concern as to the comprehensiveness of the uncovered factors (Goldberg, 1990). To address this concern and possibly rectify potential errors introduced by Cattell's reduction steps, Norman used Allport and Odbert's original list to compile a meticulous list of terms, which were sorted into 75 semantic categories (Piedmont, 1998). During the late 1980's the research into the five-factor structure diverged; comparable sets of variables were investigated and consolidated by McCrae and Costa (1987), Digman and Inouye (1986), and by Goldberg (1990). Goldberg went on to use the list that Norman had constructed in a series of three studies, which ultimately defined the Five-Factor structure (Goldberg, 1990). Since the divergence in research methodology, the five factors have been located in two traditions, namely the lexical tradition led primarily by Goldberg, and the questionnaire tradition lead by McCrae and Costa, and their influential work on the NEO-PI-R (Costa and McCrae, 1992). From this, the Five Factor Model had evolved and was seen to be a comprehensive taxonomy of personality.

1.4 The Five-Factor Model of personality (FFM)

As evidenced in the discussion of the trait approach, support for the five-factor model of personality has been accruing for the past seventy years, and chiefly during the last 20 years. During the 1980's personality theorists McCrae, John, Costa and Goldberg (Goldberg, 1990; McCrae & Allik, 2002) were responsible for launching the five-factor model into the fore of personality research. According to McCrae and Allik (2002) the FFM is an organisation of personality traits, which in turn are dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and behaviours. McCrae (2002a, p.11) further defines traits as "endogenous basic tendencies that, within a cultural context, give rise to habits, attitudes, skills, beliefs, and other characteristic adaptations". Thus traits can be understood as being relatively stable or enduring individual differences in thoughts, feelings and behaviours (Larsen & Buss, 2005). The FFM consists of five key personality traits, called domains, which are Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. Each domain is made up of six key elements called facets, which acutely describe and demarcate the dimensions of individual personality, as well as the differences in patterns of thoughts, feelings, and behaviours. The five personality domains were developed with the intention of being global personality factors, and therefore may indicate a good degree of consistency in human thought, feeling and behaviour. Costa and McCrae (1992) describe the five domains as follows:

Neuroticism[2] (vs. Adjustment) is one of two classic dimensions of personality that is represented in most personality models. The Neuroticism domain consists of six facets, namely anxiety, anger and hostility, depression, self-consciousness, impulsiveness and vulnerability. Together these facets account for the differences in the ability to construct and perceive reality as being threatening or difficult, and to feel negative emotions such as fear, shame, guilt, distrust and anger. High scores on the Neuroticism scale indicate that an individual has low impulse control, is poor at coping with stress and is prone to irrational ideas, and lower scores reflect emotional stability (Costa & McCrae, 1992)

[2] See Appendix A for a description of Neuroticism, as well as Extraversion, Openness to Experience, Agreeableness and Conscientiousness, as they are defined in the NEO-PI-R Manual (Costa & McCrae, 1992)

Extraversion[3] (vs. Introversion) also called Positive Emotionality or Surgency, is the second classic dimension of personality, and reflects the quantity and intensity of one's relationships with the social environment. There are six facets that constitute the behaviours and thought patterns that can be associated with the domain of Extraversion; warmth, gregariousness, assertiveness, activity, excitement seeking and positive attention. The facets account for the tendency to interact with that environment with energy, enthusiasm, spirit and confidence, an individual's propensity for sociability, assertiveness and talkativeness, and the ability to live out experiences as positively as possible (Costa & McCrae, 1992).

Openness to Experience[4] is a dimension that the FFM considers independent of cognitive aptitudes. Openness groups together different types of behaviours that are aimed towards a search for and love of new experiences. These behaviours can be described by the six facets that make up the Openness domain, namely fantasy, aesthetics, feelings, action, ideas and values. The facets, are manifested in a wide variety of interests, and account for an eagerness to seek out new, unusual experiences without anxiety, and often with great pleasure. Openness also indicates an active imagination, aesthetic sensitivity, attentiveness to inner feelings, a preference for variety, intellectual curiosity, and independence of judgment. Individuals scoring higher on this scale tend to be unconventional, willing to question authority, like to entertain new ideas and experience emotions keenly. Lower scoring individuals are likely to be conservative and conventional in their outlook, behaviours and social norms (Costa & McCrae, 1992).

Agreeableness[5] is unique to the FFM. It accounts for the nature and quality of one's relationships with others, ranging from compassion to antagonism. The six facets of the Agreeableness domain include trust, straightforwardness, altruism, compliance, modesty and tender-mindedness. Agreeableness is different to Extraversion in that it refers to the tone of relationships with others (kindness, empathy vs. cynicism, hostility) whereas Extraversion refers to the individual him/herself. Agreeableness indicates that a person displays altruistic

[3] See Appendix A
[4] See Appendix A
[5] See Appendix A

tendencies towards others. Therefore, high scores reflect the ability to be sympathetic with an eagerness to help others, while believing that others are trustworthy in return. Lower scores are suggestive of an egocentric individual, skeptical of others' intentions and competitive rather than co-operative (Costa & McCrae, 1992).

Conscientiousness[6] accounts for issues such as personal orientation, persistency of behaviours and the control of impulses. It is comprised of dynamic elements such as anticipation, success-orientation, task-orientation, as well as control and inhibition elements such as organization, thoroughness, perseverance, respect for procedures and standards. The six facets that function within this domain are competence, order dutifulness, achievement-striving, self discipline and deliberation. The conscientious individual is seen as purposeful, strong-willed and determined. In abundance, this trait is evidenced by consistent achievements, dependability and orderliness; and in deficit can result in annoying attention to detail and compulsive neatness (Costa & McCrae, 1992).

With a proposed template for human personality, universalist trait theorists have sought to identify the precise nature of common personality traits, or personality universals, across cultures. The debates regarding the FFM argue that while the model may have a great deal of universal applicability, it is not thorough or comprehensive enough. According to Laher (2008) there are certain factors that exist outside of a Euro-American context, which if a model is to be truly universal and exhaustive, should be considered. Recently, interest has surged into personality assessment, with specific attention to the role of culture and language, and the question as to whether the universality of the FFM truly does exist. McCrae & Allik (2002) have questioned whether the foundations of personality processes are indeed universal, or whether significant variations exist across cultures. However, there does not yet seem to be a circumscribed answer to those questions. The authors go on to suggest that in some respects personality structure does seem to transcend the boundaries of language and culture, yet in other respects it is definitively moulded by socio-cultural and historical forces. This point on intercepting environmental forces is highly applicable in the South African context. As South Africans of any population grouping, we experience a unique system of forces that intercept our

[6] See Appendix A

experiences of each other and of the world around us, and inevitably influence several aspects of personality. As South Africans we contemplate many differences, many similarities, many positive and many confounding factors in our understandings of ourselves: the population diversity; hybrid cultures; our current desire for 'ubuntu'; the relics of the Apartheid; Xenophobia; our love for *Madiba;* our love for boerewors and pap; Shwe-Shwe fashion; political corruption; the success of the '2010' preparations; the catastrophe of HIV/AIDS; arguably the highest rape, assault and violent crime statistics worldwide, and the knowledge that we all are likely to experience at least two *violent traumatic events* in our lifetime in South Africa (Steensland, 2005).

Regardless of ones grouping, we live in a multicultural environment where inequalities and differences are overtly displayed in the public eye, and where there remains an obvious and sensitive group division on several levels. It goes without saying that where there are significant and explicit group divisions, there may be several convening problems for psychometric assessment. One certainty is that personality research within South Africa seems to be evolving, and includes sensitivity towards cultures, languages, and the many sociological forces that act upon the nation's people. The movement towards culturally appropriate application of several inventories is certainly at the fore of personality research (Abrahams, 1996; Heuchert et al., 2000; Laher, 2008; Van Eeden & Prinsloo, 1997). In addition, the international trends to date indicate that the primary features of the FFM, or personality trait structure, appear to generalise well, although there are some fascinating variations across cultures (Cheung et al., 2008; Claasen, 1997; McCrae & Terraccianno, 2005; Piedmont, Bain, McCrae & Costa, 2002).

1.5 The Five-Factor Model and the importance of a 'National Character'

McCrae (2002, p.11) has noted that for centuries "people have characterised themselves and their neighbours in the language of personality traits (usually more flattering to themselves than others)" and that the influences of a 'national character' upon the collective conscience, or collective cultural experience, of a group of people is a hugely powerful denominator in personality assessment. These points of intrigue have generated interest within various different

cultures into the exploration of 'national character' and its implications for personality structure. However, writings dealing exclusively with national character are unfortunately very scarce. Amongst the few articles that are available on this topic, perhaps the better writings include Gűlgőz's (2001) exploration of a Turkish national character, Cheung's et al. (2001) descriptions of Chinese identity, Piedmont's et al. (2002) summary of Tswana character, Hřebičkova's et al., (2002) review on Czech, Polish and Slovak character and finally Horn's (2000) ponderings on Xhosa character. Although the nature of Turkish, Chinese, Slovak, Tswana or Xhosa character are not the object of discussion herein, what is exemplified as being of value in these articles, is the socio-cultural insight that is cultivated for that specific nation's developing psychometric expertise. Importantly, this valuable cultural capital is promoted alongside the use of Westernised psychometric instruments in a non-western community, in which there is a sore deficit of culturally congruent assessment devices available to local psychologists. The majority of available literature deals with national character as a supportive topic, rather than a focal point. To confound the issue, the opinions of historians, philosophers, anthropologists and psychologists, relating to a people's national character tend to be conflicting because of what each discipline prefers to focus on theoretically (Hřebičkova's et al., 2002). Therefore, it is no surprise that it has been a difficult task to formulate appropriate hypotheses about the FFM in different cultures, despite the unanimous plea to its importance. However, there is consensus that exploration of this topic is an important endeavour, especially when it comes to fully grasping the concept of personality in a particular culture or context.

Gűlgőz (2001) points out that a person's ability to describe and make sense of oneself is largely determined by their character, which in turn is largely shaped by linguistic and cultural contexts. In relation to this, Allik and McCrae (2002) describe that the interaction between a cultural context and an individual's character (their values, norms, beliefs, roles, habits, interests and attitudes) is an expression of personality. This study takes these definitions a step further by suggesting that when personality, or character, is evaluated contextually as the authors pointed out, it is related to the development of a national character. In a portion of this study the participants provided their population grouping. Although this descriptive exercise did not form any part of the data analysis, it did provide a great deal of evaluative support and socio-cultural insight for the study. This keeps in-line with most other research on national character as an

explorative exercise, providing a contextual frame for the data analysis, and not necessarily the actual analytic process (Cheung et al., 2001; Gűlgőz, 2001; Horn, 2000; Hřebičkova, 2002; Piedmont et al., 2002). During the consolidation of the qualitative data, it was helpful to visualise different aspects of a national character to better understand the socio-cultural and lingual dynamics of a multicultural South African user group.

Owing to the ways in which personality and national character interact, interpretations about personality structure have an inclusive basis; ontologically (what it is) in a particular cultural setting and epistemologically (how we can recognise it) in that context. This sentiment relates familiarly to the integrated approach used by Cheung et al. (2008) in their evaluation of Chinese personality, and its correlates to the FFM, as well as the indigo-cultural perspective adopted in the present study. From an anthropological perspective, Geertz (1975) insisted that personality is a collage of meaningful activity that is open to interpretation from several angles. As personality psychologists, we should apply this Geertzian theory to personality models, such as the FFM. To this end, the general consensus has been that the FFM can be sensitively influenced by an audience's national character or by a cultural environment (Cheung et al., 2008; Gűlgőz, 2001; Hřebičkova et al., 2002; Piedmont et al., 2002).

Since the turn of the millennium, an overwhelming rally of research on the five-factor model of personality, collectively analysing no fewer than 69 different cultures worldwide, has created vast possibility for the forward movement of culturally relevant personality assessment. Highlighted within this unique opportunity are the influences that language, culture, national character and sociological, political and historical events play on personality assessment (Church & Katigbak, 2002; Heuchert et al., 2000; Hřebičkova et al., 2002; McCrae, 2002a; McCrae & Terraccianno, 2005; Piedmont et al., 2002; Rolland 2002). In all cases the FFM has evidenced some good replication, and therefore adequate trait representation in most Western societies, as well as some non-Western societies. However, there are several on-going debates as to whether the measurement of the FFM is culturally appropriate in a non-Western context, and whether it is the optimal, culturally relevant approach for non-Western societies.

1.6 The Five-Factor Theory of personality (FFT)

In contrast to the Five-Factor Model (FFM; McCrae & John, cited in Allik & McCrae, 2002) which is largely a pragmatic outline for personality structure and traits, the Five-Factor Theory (FFT) developed by McCrae and Costa in 1999 (McCrae & Allik, 2002), was an attempt to include and conceptualise the newer findings about personality and traits. The FFT describes a dynamic intersection of internal and external forces, and how they influence the development of a personality. Allik and McCrae (2002) describe the intersection as elements of biology and culture, interacting to form an individual's values, norms, roles, relationships, habits and attitudes, and are an expression of personality.

The primary issue at hand within the FFT is traits, or *basic tendencies*, such as Neuroticism, Extraversion and Openness for example. Other trait theories posit that traits can be equated or related to behaviours, habits or personality patterns. However, unlike its theoretical kin, the FFT defends the claim that traits are much deeper tendencies, which are inaccessible to outside forces (Allik & McCrae, 2002). The question then arises, as to how these traits interact with internal and external forces, as proposed previously. The answer lies in the expression of traits. According to the FFT, even though a person's traits, or basic tendencies, are unwavering and deeply grounded within the individual, they "interact with the environment in shaping those psychological structures that…guide behaviour: habits, values, interests, roles, relationships and attitudes" (Allik & McCrae, 2002: p304). Therefore, it is not the basic structures of a person's unique traits that are influenced by culture, context, society or life experiences, it is the expression of those traits – the personality – that finds form and flavour within that specific context.

The reason why the FFT is important to this study is because it makes allowances for both personality approaches that orientate this study; universalist as well as cultural and indigenous perspectives, as set out previously (Church and Katigbak, 2002). In doing so, the FFT distinguishes itself from other personality models because it claims that traits are endogenous, changing only to *biological inputs* (such as brain injury, hormonal fluxes, aging or illness), while it also accepts that the personality product of trait expression, called a *characteristic*

adaptation, is directly acted upon by *external inputs* (such as culture, language, society and life experiences) and an individual's *objective biography* (emotional reactions and behaviour) (Allik & McCrae, 2002). The FFT is at the forefront of this indigo-cultural approach to personality assessment, whereby the unique product of personality is viewed as a mutually inclusive product of that which is endogenous and of that which is acquired throughout the life course. In other words, personality is a concept that is located within psychometric traditions, but can be understoond pliantly as an expression of the surrounding socio-cultural milieu. Essentially, this theory can be applied to the present study, in that it is concerned with the effects that external inputs (such as culture, society or language) have on an individual's ability to understand the presentation of Westernised concepts of basic tendencies (personality traits) accurately in the NEO-PI-R. The question that needs to be addressed is whether the NEO-PI-R is appropriate or not; that is, do the personality constructs, words, items and ideas in the NEO-PI-R represent a Westernised setting, and if so, how does this hinder a user's understanding during the assessment process. Figure 1.2 represents the FFT:

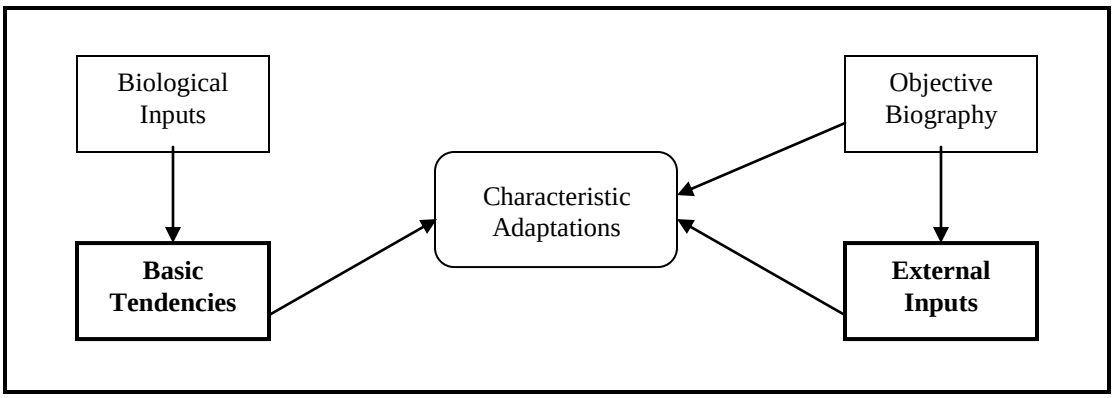


Figure 1.2. - Five-Factor Theory (McCrae, 2002b; McCrae and Costa,1999)

1.7 The NEO-PI-R

The NEO-PI was developed as an operationalisation of the Five Factor Model during the 1980's and was reworked to its current, revised version, the NEO-PI-R, by Paul T. Costa and Robert R. McCrae (Costa & McCrae, 1992). The NEO-PI-R was originally developed in the context of longitudinal studies of personality and aging, but has since become the most widely used and

researched operationalisation of the Five-Factor Model of personality (Hřebičkova, et al., 2002; McCrae & Terraccianno, 2005). It incorporates the foundations of the FFM because of the inherent organisation of personality traits, providing both subtlety and cultural nuance where possible. The NEO-PI-R uses the five factors of the FFM, calling them domains, and supplements each domain with a supportive array of six components called facets[7]. The personality domains of the NEO-PI-R are Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness.

The following brief descriptions set out the five personality domains as proposed by Costa and McCrae (1992):

Neuroticism, or emotional stability, is defined as the way in which individuals experience emotional challenges such as fear, insecurity, anxiety, sadness, embarrassment, anger, guilt, and distrust, and also considers how an individual copes with these types of stressors. It is the degree to which a person is calm, stable and self-confident as opposed to anxious, moody and insecure. *Extraversion*, or surgency, is regarded as a fond affinity toward sociability, assertiveness, activeness and being talkative. It considers the frequency of social attention and leadership qualities present in an individual, and the degree to which an individual is extraverted and outspoken as opposed to introverted and shy. *Openness to experience*, or intellect, is defined by an individual's willingness to engage in new experiences and novel ideas. These individuals possess unconventional values, experience lucid dreams and are described as creative, curious and intellectual, as to concrete minded and narrow thinking. *Agreeableness* embodies qualities such as kindness, sincerity, cooperativeness, and helpfulness towards others, and is described as the degree to which a person is good-natured, warm and understanding as opposed to irritable, uncooperative, inflexible and disagreeable. The final factor, *Conscientiousness*, is defined as the degree to which a person is responsible, meticulous, practical and organised as opposed to careless, sloppy, irresponsible, and impulsive. These factors are thought to add complexity, richness and nuance to personality description (Costa & McCrae, 1992).

[7] See Appendix A for a tabulated summary of the five personality domains and facets

Many cross-cultural studies have begged the question as to whether the five factors are indeed global or consistent across cultures. Poortinga, Van De Vijver and Van Hemert (2002) believe that administration of the NEO-PI-R in a non-Western society will probably never result in a similar factor structure cross culturally, essentially because the idea of 'personality' is a Western notion, and therefore notions of 'personhood' may be different cross-culturally. However, they go on to say that the evidence to date of structural equivalence has been good enough to support the search for personality universals as a meaningful endeavour. Research on personality description in South Africa has been conducted utilising the NEO-PI-R and sought out accurate replication of the five factors of personality in local samples. However, the discussion of the literature up to now has indicated that the success of the FFM is lacking in African cultures.

1.8 Cross-cultural research on the NEO-PI-R and the replication of the FFM

Many of the available studies done in the local context have explored the NEO-PI-R (or other instruments) with respect to population groupings, rather than the NEO-PI-R with respect to language. However, the studies that have explored localised variables with respect to a Westernised inventory are worth discussing. The reason being is that the underlying premise of Westernised instruments being not entirely congruent in the South African context is common to these studies, as it is to the present study.

Heuchert, Parker, Stumpf and Myburgh (2000) using the NEO-PI-R in English on a multiracial group of South African students, found support for the five factors, although more clearly in the White students than any other population group. For the Black students, Openness to experience was particularly weakly replicated. The authors also cautioned that there existed significant differences in the mean scores of some domains and facets, where the differences were speculated to be largely attributed to social, lingual, economic and cultural differences. The importance of this case relates directly to the influences of language upon the expression of personality traits; in South Africa, it may be suggested that English is rarely the home language of Black individuals, and is often the case for White Afrikaans individuals, and that these participants may have been completing the NEO-PI-R from a second (or third) language

perspective. This presents an immediate challenge in that language acted as an interference factor for the efficacy of test scores and replication of the FFM. Further, as evidenced by Heuchert et al. (2000) the problematic scores may be attributed to the personality expression that was the product of an interaction of forces, namely what the FFT calls *external inputs* (cultural, lingual, economic or social differences), as well as the individual's *objective biography* (unique emotional and behavioural responses to these life experiences), and thereafter the apparent differences in the *characteristic adaptations* (the personality products). This is arguably due to presence of Westernised English for individuals who are second (or third) language English-speakers, therefore making understanding the test a challenge, perhaps making some items inappropriate, and ultimately not representing the FFM adequately amongst Black South Africans.

Similarly, in a study by Heaven and Pretorius (1998) on a multiracial group, support for each of the five factors in an Afrikaans-speaking South African sample was found. However, the five factors did not replicate as well for a Sotho-speaking South African sample. This sample yielded poor results overall, with neuroticism and emotional stability being the only two domains that were robust enough to emerge, meaning that again Conscientiousness, Agreeableness and Openness were not replicated well. Earlier research by Heaven, Connors and Stones (1994) on Black South African university students and Australian university students, found that adequate replication of all five factors was not achieved. In particular, Openness, Agreeableness and Conscientiousness were problematic amongst the South African sample, who did not speak English as a home language. In both cases, there were three plausible arguments that were proposed in explanation of these results; firstly the use of the Westernised English terms on participants whose home language was not English could have created barriers in comprehension and appropriateness. Secondly, it is possible that the response sets or response styles of the South Africans were different, and more dominant, than the rest of the sample, and finally that FFM may not have adequately represented the personality structure of Black South Africans.

Finally, in a study by McCrae and Terraccianno (2005) using the NEO-PI-R on 50 different cultures worldwide, the five factors were found to be general and common to all people.

However five of the African samples (Botswana, Nigeria, Burkina Faso, Ethiopia, Uganda) indicated considerably less consistency. This finding is in line with that of the afore-mentioned studies. It may be suggested that these differences could have been attributed to the fact that the NEO-PI-R was administered in English and French, and not in the respective home languages of the participants, therefore creating barriers in comprehension. This evidence also lent itself to the same suggestion as in Heaven's et al. results; that the FFM may not be thorough enough, nor the most comprehensive model, particularly in non-Western communities, such as an African cultural context (Abrahams, 1996; Heaven & Pretorius, 1998; Heuchert, Parker, Strumpf & Myburgh, 2000; Laher, 2008; McCrae & Terraccianno, 2005; Prinsloo & Van Eeden, 1997; Wallis & Birt, 2003).

According to socio-cultural psychologists, Poortinga, Van De Vijver and Van Hemert (2002, p.296) "cross cultural research on personality traits…is not merely a working assumption anymore, but rather a sound starting point". Undoubtedly, the next step in the advancement of this body of knowledge is to extend this research more substantially into non-Western societies such as Southern Africa. The consensus between Poortinga, Van De Vijver and Van Hemert (2002) and Church and Katigbak (2002) seems to be that such research automatically implies that tests and test items be revised, or rewritten, and that perhaps new data collection methods will have to be employed beyond self-report questionnaires. In addition, and importantly for South African audiences and researchers, besides omitting culturally inappropriate items, test revisions should also consider the inclusion of culturally specific items.

One certainty is that a larger reservoir of cultural and lingual analysis and investigation is needed in order to make clearer the aspects of personality which may be deemed 'universal' and why, and which dimensions of the FFM replicate well or poorly, and why. The literature by Cheung et al. (2008) accentuates this point and advocates that personality psychology should now be feeling a strong need to go beyond structural replication of the FFM, towards cross-cultural investigations of personality, behaviour and concepts of the self in different cultural contexts. What we can expect from this type of research is the emergence of a sharper representation of personality perspectives. In the chapters to follow, support for these

sentiments will be elaborated upon by examining the concepts of bias and equivalence, and the ways in which they intercept the concepts of personality, language and cultural context.

2

Bias and Equivalence in the South African Context

In 1998, four years following South Africa's reformation to democracy, the Employment Equity Act (EEA) pronounced psychology as the caretaker to issues of appropriateness and applicability of psychological instruments for the country's peoples (Van der Vijver & Rothmann, 2004). The Act itself stated: "Psychological testing and other similar assessments are prohibited unless the test or assessment being used – (a) has been scientifically shown to be valid and reliable, (b) can be applied fairly to all employees; and (c) is not biased against any employee or group" (Government Gazette, 1998). Therefore the need to re-evaluate instruments that meet with the Act's requirements has been urgent, especially due to the changed fabric of society since the integration of previously segregated population groups (Meiring, Van der Vijver, Rothmann & Barrick, 2005). Unquestionably, there has been a substantial transformation within South Africans since the early 1990's, and there are very few countries in which this degree of change and transformation has manifested so widely and so noticeably as it has here. In spite of this steadily accumulating well of cultural hybridisation, research regarding bias and equivalence of assessment instruments in South Africa is still in its infancy (Taylor, 2000). The NEO-PI-R in particular has received very little scrutiny in South Africa, in comparison to its assessment counterparts (Abrahams, 1996; Meiring 2007; Meiring, Van der Vijver, Rothman, & Barrick, 2005; Van Eeden, & Prinsloo, 1997). Therefore, to meet the circumscribed standards of both the profession of psychology, as well as that of the EEA, it is now critical to acutely consider the issues of bias and equivalence in multicultural assessment in South Africa. In this chapter the concepts of bias and equivalence will be examined with special reference to personality testing.

2.1 A description of bias

According to Van der Vijver and Rothmann (2004) bias refers to the presence of interfering factors in cross-cultural measurement, and is said to be the systematic sources of variation in test score comparisons. These differences, sources of variation, or interfering factors, are thought of as both *friend and foe* within personality research, with some authors referring to bias as a nuisance and other authors endearing bias as a prospect. The individual perspective is in many ways dependent on the research paradigm (universalist pursuits vs. cross-cultural comparisons) and the type of research at hand, and is essentially the critical eye of the research focus. Meiring (2007) suggests that if scores are biased, the differences in scores between cultural groupings are most likely influenced by certain cultural or measurement artefacts. Particularly in South Africa, studies over the years have shown that the most common influential artefacts affecting test scores are an individual's level of education, their home language and English proficiency (Heaven & Pretorius, 1998; Horn, 2000; Meiring, 2007; Van der Vijver & Rothmann; 2004; Van Eeden & Prinsloo, 1997).

The incidence of cultural and measurement artefacts is well illustrated by Cheung et al. (2008) in their measurements of Chinese self-esteem compared to that of an American sample. Their findings showed that self-esteem was influenced by the individual's perception of modesty. This construct was stronger in the Chinese personality than the American personality, and it is thought that both cultural and measurement artefacts were at play in this result; the influence of social desirability could have culturally nuanced and/or contaminated the responses to modesty. The researcher's opinion is fundamentally in line with that of Cheung et al. (2008) and Poortinga, Van De Vijver and Van Hemert (2002, p.284) in that bias need not be viewed as a confounding, or a 'nuisance' factor in any measurement circumstances, and that it should instead be "treated as a reflection of cultural differences that require further analysis and explanation".

The prospect of bias mobilises many different angles of analysis for a body of research, and can present itself in almost any face within that research. Needless to say, there are different

categories of bias[8], which are taxonomised according to the influence they exert upon the data and test scores, namely construct bias, method bias and item bias. The discussion to follow on the various forms of bias has been adapted from Van der Vijver and Tanzer's (1997) definitions of bias in cross-cultural assessment. The discussion will make reference to and succinctly describe each category of bias, while being guided by an overarching interest in language bias. Refer to Figure 2.1 below:

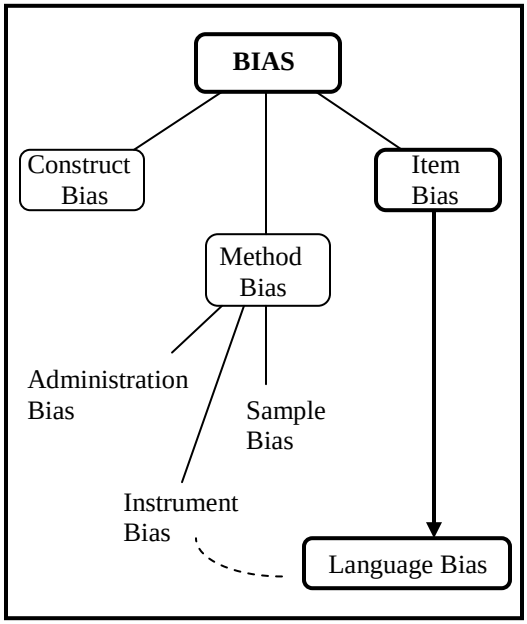


Figure 2.1 - Categories of bias

Construct bias occurs when a construct (a concept) that is being measured in a test is not the same across different cultural groups. This form of bias is likely to arise when a test does not review all the relevant aspects of a construct; in other words, when there is insufficient coverage of a particular personality facet or domain within a test. Instruments that assess constructs in a culturally inappropriate manner also introduce bias at a construct level, if the personality traits or behaviours being assessed do not belong to or apply to the particular cultural group under assessment.

[8] See Figure 2.1 ; a summary of the various categories of bias

Method bias is a standard term used for all forms of bias emerging as part of the method or procedure of the assessment. It includes factors such as sample incomparability, instrument differences and administration effects like tester and interviewer effects and the actual mode of administration, which includes environmental influences such as the testing conditions, the venue, or the language medium used (Meiring et al., 2005). Succinctly, this category of bias can be thought of as any nuisance factors resulting from the sample, the instrument itself and/or the test administration environment. Method bias as a category can be described at three levels; it helps to create taxonomy (i.e. a label) for each of these levels therefore defining three further forms of bias, namely sample bias, instrument bias, and administration bias.

Sample bias refers to all confounding factors associated with the sample itself. According to Van der Vijver and Rothmann (2004) when there are significant differences within the sample, and assuming that these differences are not the focus of the study, one can expect to encounter a noticeable degree of bias when the sample members are compared. Therefore it can be said that there exists a strong positive correlation between socio-cultural differences and sample bias. Generally speaking, "sample bias can be expected to increase with the cultural distance between samples" (Van der Vijver & Rothmann, 2004, p.3).

Administration bias is encountered when there exist differences in the test procedure, the language medium or in the mode used to administer the instrument. These sorts of disturbances can be a hindrance to the efficient administration of the test, and may include factors that are difficult to control, such as ambient noise, poor venue conditions (poor lighting, physical discomfort) and a lack of privacy (some individuals are more prepared to answer sensitive questions in a private, rather than 'shared' environment) (Van der Vijver & Rothmann, 2004). It can be further surmised that the presence of the interviewer/administrator may have an effect on the results and outcomes of the assessment; these effects have a long history of empirical investigation, but do not fall into the scope of this study. Administration bias may also emerge if the instrument's instructions, guidelines or test questions are ambiguous or unclear, and lead to aspects of the test itself being misunderstood (Poortinga & Van der Vijver, 1987).

Instrument bias involves the general features of an instrument that unintentionally give rise to, and accentuate cross-cultural differences (Meiring et al., 2005). For instance, in the case of the NEO-PI-R, the candidates are required to complete the questions as per a rating scale; it may be critical to consider this aspect from a culturally sensitive standpoint, in which we bear in mind the fact that different cultures deal with rating scales or checklists in different ways. As evidenced by Heaven, Connors and Stones (1994) in a study investigating the FFM in a multicultural sample of South African and Australian university students, the responses of the Black South African students to an adjective checklist format operated strongly in the study, and gave rise to a degree of instrument bias. Similarly, Hui and Triandis (cited in Van der Vijver & Rothmann, 2004) found that Hispanic Americans tended to respond to a five-point rating scale with more extreme responses. Both cases extricate good examples of instrument bias, whereby the instrument favours those individuals who respond well to a rating scale or checklist, which is in turn thought to be a Westernised response format (Berry, Poortinga & Pandey, 1997). Researchers have also argued that people who are more familiar with test taking in general and psychological test taking in particular will respond differently on psychological tests than those who are not as familiar (Abrahams & Mauer, 1999; Foxcroft & Roodt, 2005; Van Eeden & Prinsloo, 1997). This concept is often referred to as the practice effect, and can be considered instrument bias. Although these applications of instrument bias are not of direct focus in the present study, it certainly is worth noting as an additional source of general cross-cultural and language bias (Van Eeden & Prinsloo, 1997).

Item bias is a generic category for a disturbance of any sort at an item level. A popular definition for item bias, by Holland and Wainer (cited in Van der Vijver & Rothmann, 2004) suggests an item may be biased if respondents from varying cultural groupings, who have the same standing on an underlying construct (e.g. equal intelligence), have differing mean scores for a particular item. In other words, an item can be biased if it favours one cultural group in the test score levels. The most common sources of item bias include poor item translation in the case of a test being available in different languages, ambiguities in the meaning of the item, low familiarity or appropriateness of the item content for specific cultural groups and also the influence of cultural specificities such as the culturally-bound connotations for certain words. For example, in the American context the word ‘aggression’ as used by American English-

speakers, has a combined meaning of violence and enterprising energy; however, in the translation of this understanding in the South African context, it is evident that English-speaking South Africans do not maintain the combined meaning of violence and enterprising energy of the original word and meaning (Van der Vijver & Rothmann, 2004). Similarly, some constructs measured by the NEO-PI-R, especially at the facet level, simply do not have counterparts in South African cultures (Piedmont et al., 2002). This feature of item bias, supported by Van der Vijver and Rothmann's example as above, follows onto what can be thought of as a central focus for this study; namely, lingual bias, also known as language bias.

Language bias is a form of item bias that is fundamentally constituted by problems with communication between the assessment participant and the instrument (Poortinga & Van der Vijver, 1987; Van der Vijver & Rothmann, 2004). It is widely thought that the influences of home-language can be a potent source of bias when the participants differ in proficiency in the test medium (Abrahams, 1996; Heaven & Pretorius, 1998; Horn, 2000; Laher, 2008; McCrae & Terraccianno, 2005; Piedmont, Bain, McCrae & Costa, 2002; Van der Vijver & Rothman, 2004). Language bias is hardly uncommon in multicultural studies, in which an instrument is administered in a language that is the second or third language of the participants, simply because this form of bias critically confounds the test scores. In many cases, "even when linguistic skills are not being assessed, the level of proficiency that is required to answer items of personality instruments is often quite advanced" (Van der Vijver & Rothmann, 2004, p.5). Abrahams and Mauer (1999) concur on this sentiment, and in their research on the 16PF found that significant lingual and culturally-relevant revisions were required if the test was to be appropriate, unbiased and fair for a South African audience. The resulting changes to the 16PF for a South African audience were not trivial; "of the 185 items in the new edition, 76% were selected as being the best item (although the wording of over half of those items was then modified) and the remaining 24% of the items [were] completely new" (Paunonen & Ashton, 1998, p.9). Certainly, the potency of language and the benefits of culturally fair and unbiased assessment cannot be overlooked in multicultural studies.

"Linguistic forms of bias are the most common", whether they emerge from an item or method perspective, and are especially prolific where idiomatic usages of language differ from one

context and/or culture to another (Rust & Golombok, 1992, p.91). This is a particularly difficult issue to account for with a diverse and widely used language such as English; both spoken globally and adapted locally. If a person learns formal or scientific English, rather than idiomatic or colloquial English, they may well be perfectly fluent at work or at university, but still be disadvantaged by test items that are generated by first language English-speakers (Rust & Golombok, 1992). Similarly, in one country there may be many different dialects that use differing grammatical structures, which in a testing environment makes the test medium a vehicle for language bias (Rust & Golombok, 1992). This affect is hardly difficult to imagine in the South African context, where there are 11 official languages, representing at least three different language families (Piedmont, Bain, McCrae & Costa, 2002). However, the dominant testing medium remains English, and this opens up an ideological 'can of worms' for both assessment instruments dealing with bias in general, and language bias in specific, as may well be the case for the NEO-PI-R.

2.2 A description of equivalence

Equivalence can be thought of as the animus to bias. In considering equivalence in this manner, it may be a relative of bias; if test scores are unbiased they are equivalent and can be open to cross-cultural comparison (Van der Vijver & Rothmann, 2004). According to Van der Vijver and Leung (1997) equivalence refers to the implications of bias, and looks at these implications with respect to the comparability of constructs and test scores. Equivalence is therefore the concept that illustrates whether a test's items, words and concepts have identical meanings across cultures and whether a test is fair and equivalent in as many aspects as possible (Van Hemert, Van der Vijver, Poortinga & Georgas, 2002). Although the notion of 'identical meaning' is not easy to establish from one culture to another equivalence is critical to the proper use of tests cross-culturally. Therefore it is not unreasonable to state that if a test is to be deemed appropriate for a particular cultural audience, the concept of equivalence demands that the test is constructed or standardised by writers who fully understand the cultural environment and languages involved (Irvine & Berry, 1983). Equivalence can be subdivided into four types, namely construct inequivalence, structural equivalence, measurement unit equivalence and

scalar equivalence. However, only the former two subdivisions are relevant in the scope of this study and will be elaborated with relevance to this study in the discussion to follow.

Construct inequivalence is described by Van der Vijver and Rothmann (2004, p.4) as "comparing apples and oranges", and amounts to making a comparison between groups where there is a lack of shared attributes. This lack of equivalence is important to consider in multicultural studies, where culture-bound concepts, words, ideas or associations may interfere with the meanings within a test item or construct. The assumption of there being construct inequivalence present in many Westernised instruments when they are used in a non-Western setting, is an assumption that is not uncommon in a multicultural study. If an instrument lacks cross-cultural equivalence in its constructs, namely its words, ideas and concepts, it may be subject to the emergence of many different types of bias. Succinctly then, there may be no grounds upon which to draw comparative data or theorise shared attributes across cultures.

Structural equivalence in comparison is present if an instrument administered in many different cultures, measures the same constructs in all of those groups. However, and importantly for the South African context, the presence of structural equivalence does not necessarily presuppose the use of identical instruments in different cultures (Van der Vijver & Rothmann, 2004). In fact, quite the opposite is true; in so many instances, it is the underlying construct that is cross-culturally relevant and appropriate, and therefore comparable. What this means is that while the product of the assessment is similar and comparable, the process to get to that product is different and culturally appropriate. Essentially, Cheung et al. (2008) have recently theorised a similar sentiment regarding the CPAI, which assesses Chinese personality from an indigenous perspective. Not only are the measurements culturally relevant, but they are also of cross-culturally comparative value because they were derived using both Western assessment standards and indigenous perspectives, therefore corresponding very well with Western psychological constructs while also being very much more culturally appropriate.

2.3 Bias and equivalence in the South African context

The first thorough and systematic study of bias in the South African context was carried out during the late 1980's by Owen (cited in Meiring, 2007), in which test and item bias was identified in the Senior Aptitude Test. The main conclusion drawn from this groundbreaking study was that psychology faced a major challenge for the future; the research and development of fair and socio-culturally appropriate testing for South Africans. Since then, a number of key-note researchers have footed the trail upon which the present study journeys (Abrahams, 1996; Heuchert, Parker, Stumpf & Myburg, 2000; Heaven, Connors & Stones, 1994; Horn; 2000; Laher; 2008; Prinsloo & Ebersöhn, 2002; Taylor & Boeyens, 1991; Wallis & Birt, 2003).

Increasingly psychologists are becoming aware, particularly in the South African context, of creating instruments or utilising already developed instruments in a fair and unbiased manner. South Africa is a land of great cultural diversity and it is essential that the instruments be unbiased and equivalent across all cultures. (Abrahams & Mauer, 1999; Van der Vijver & Rothmann, 2004; Van Eeden & Prinsloo, 1997). The discussion to follow will outline the various investigations of bias that are available in contemporary South African research on various psychometric instruments. In South Africa it may be assumed that a vast majority of individuals have never encountered a psychometric instrument before. This lack of exposure to assessment instruments indicates method bias, and means that certain South African individuals may be disadvantaged because they may not understand the procedure and purpose of assessment, and may not be familiar with the instructional and response style of actual test items. As illustrated by Lyons and Chryssochoou (2002), in a multicultural setting there may be significant differences between cultural groups and their familiarity to assessment procedures, and that this can overtly impact the intergroup result comparisons that are obtained. The meaning of this statement can be ratified by the claims made in Heuchert's et al. (2000) study, whereby differences between the in test scores of differing cultural groups were speculated to be largely attributed to social, lingual, economic and cultural differences. Furthermore, in South Africa our socio-political history has been such that certain racial groups were exposed to psychometric instruments, while others were not. Therefore, Lyons and Chryssochoou (2002) go on to state that certain communities are likely to be more familiar with rating scales, such as

a Likert type scale or a checklist as is the case with the NEO-PI-R, than other cultural groupings who would be at an obvious disadvantage based on procedural familiarity alone.

Psychometric assessments are popular and widely used in South Africa, however there have been few studies conducted on the score comparability of different cultural groups. There have been some studies that have focused on issues such as comparability, appropriateness, applicability and the affects of home languages on test scores, but overwhelmingly there has been little support for imported instruments, and therefore in essence, little universal support for the FFM in multicultural South African audiences. In short, the evidence for consistent patterns of language bias is somewhat lacking. However, in South Africa a few studies have focused on the NEO-PI-R, but there remains a sizeable gap in the literature specifically regarding issues of language bias and appropriateness of the instrument.

Taylor (2000) carried out a comparative study on Black and White employees in a work setting, and used the NEO-PI-R to assess personality. The results showed that the Openness factor in particular was problematic to extract for the Black employees, and that the NEO-PI-R did not work as well for Blacks as it did for Whites. Taylor (2000) goes on to state that Black and White individuals whose home language was not English experienced problems in understanding the questionnaire, mostly due to the fact that some of the items in the NEO-PI-R are difficult and abstract ideas to grasp, even when English is a first language. Once again, similar findings have dominated personality assessment in South Africa in the past (Abrahams & Mauer, 1999; Heuchert et al., 2000; Heaven, Connors & Stones, 1994; Van der Vijver & Rothmann, 2004; Van Eeden & Prinsloo, 1997).

Abrahams and Mauer (1999, p.76) studied the impact of home language on responses to the items of the 16PF; that is, whether it affects an individual's ability to understand. They found evidence of language bias in historically disadvantaged groups of South Africans, and in particular, noted discrepancies in the individual's ability to understand in so far as:

- individuals were unfamiliar with certain words and concepts within the test material
- the tests measured different constructs in the group for whom the test was intended
- the multicultural society is not adequately represented in the standardisation norms

Therefore it is suggested that researchers agree that issues of appropriateness and applicability of imported instruments, which are not standardised for a multicultural South African audience, are not suitable for use in a multicultural society such as South Africa (Abrahams, 1996; Abrahams & Mauer, 1999; Claasen, 1997; Meiring, 2007; Meiring, Van der Vijver, Rothmann & Barrick; 2005; Taylor, 2000).

Internationally, patterns of political and socio-economic discrimination in the past have been similar to those in South Africa. Therefore, psychometric research conducted on these populations is useful in clarifying issues of language bias, as it has been discussed thus far. Almost thirty-four years ago, research conducted abroad examining item and language bias, by Satz-Miracle (1981) and Scheuneman (cited in Rust & Golombok, 1992), found evidence in studies on children using the Wechsler Intelligence Scale for Children (WISC) and the Metropolitan Reading Test (MRT) respectively; the former used Latin-American Spanish-speakers, and the latter used Black and White American English-speakers of mixed cultural groupings. In both cases, when the responses of the children were compared and analysed, language bias was the most conspicuous factor. It illustrated the influence that home language and sentence (grammatical) structure has on an individual's ability to understand instructions and questions, and the role that culture plays in understanding written and spoken language. The study by Satz-Miracle is an important exemplar of this assertion and will be elaborated in the following chapter. In all cases, the need to extend assessment of all kinds "beyond its Western and possibly ethnocentric bases" is urgently required (Warren, cited in Kline, 1983, p.337). The literature indicates that this sentiment is both strong and widely shared in the field of testing, where cultural appropriateness has fast become the rule rather than the exception (Abrahams & Mauer, 1999; Cheung et al., 2008; Claasen, 1997; Prinsloo & Ebersöhn, 2002; Taylor, 2000).

In the case of this study, the NEO-PI-R was administered in English to a multicultural and multilingual group of students from the University of the Witwatersrand (Wits), in order to observe the potential effects of home-language upon the NEO-PI-R scores. The use of students ensured that certain forms of bias were accounted for, and that the group embodied some equivalence; method bias in particular, and sample, instrument and administration bias in

specific were thought to be accounted for because Wits students study in an English-medium university and a certain level of proficiency in English is required by all students, particularly those at an honours level. Further, psychology students in specific are generally also familiar with test-taking and test-taking procedures, and therefore it was assumed that the effects of language proficiency and test wiseness would be negligible in this sample.

Perhaps the primary concern of personality assessment in South Africa is (or should be) the development of new, culturally appropriate instruments and also the standardisation of existing instruments for a local audience (Van der Vijver & Rothmann, 2004). Alongside this dapper notion, there is a social environment where change is a constant, and still there exist several psychometric assumptions about personality universals and cultural specifics that have gone largely unexamined in the Southern African context. However, as Plato argued, the 'ave§etastos', the unexamined life, is not worth living. True to this sentiment, research in South Africa has come to a point of reflection; the trends of yesteryear, which ascribe to Western assessment practices, are waning, and there are now grounds for a much-deserved and well-overdue South African perspective within local assessment practices. The commonality between the present study, and that of its theoretical inspirations (Abrahams, 1996; Heaven, Connors & Stones, 1994; Heuchert, Parker, Stumpf & Myburg, 2000; Horn; 2000; Laher, 2008; Prinsloo & Ebersöhn, 2002; Taylor & Boeyens, 1991; Wallis & Birt, 2003), is that the intention of all has been to explore the definitions of South African personalities and how best to assess them. However, what makes this study unique is that it also seeks to identify language bias in the NEO-PI-R. According to the most recent literature sources (Meiring, 2007; Laher 2008), the present study may be amongst the first to systematically address issues of language bias in the NEO-PI-R. Hence, the chapter to follow explores the intersection of language, culture and personality as a central point fusion in personality assessment in South Africa.

3

The contextual dynamic of personality, culture and language

'When I use a word,' Humpty Dumpty said, in a rather scornful tone, 'it means just what I chose it to mean – neither more nor less.'
'The question is,' said Alice, 'whether you can make words mean so many different things.'
'The question is,' said Humpty Dumpty, 'which is to be master – that's all.'

- *Lewis Carroll (1871) 'Through the Looking Glass'*

3.1 Introduction

In the December 2007 issue of the *Journal of Personality* (Editor in Chief, 2007) no fewer than six out of thirteen articles dealt with the various cultural influences that influence personality assessment. Undoubtedly, the interest that is being invested on the influences that culture has upon personality is unwavering, even after some three decades of intense pursuance. The revival of cultural study within personality research has been deemed the new starting point in contemporary research, rather than an accessory concept (McCrae & Terraccianno, 2005; Van Hemert, Van der Vijver, Poortinga & Georgas, 2002). This study follows the same passage of enthusiasm.

In McCrae and Allik's *The Five Factor Model of Personality Across Cultures* (2002), it is purported that aspects of personality are profoundly affected by both cultural and social forces, and in some instances, political and historical forces as well. One has to be implicitly aware of and sensitive to these issues when researching personality psychology in the South African context, as it is hardly unreasonable to assume that the 'South African personality' – metaphysically speaking – will be nuanced by, and cultivated within these very same forces. This chapter follows a discussion that is guided by the cultural and lingual dynamics of

personality assessment, and focuses on the potential bias and cross-cultural comparability of using the NEO-PI-R on a South African audience.

3.2 Conceptualising Culture

Of critical importance to this study, is the conceptualisation of culture. Herein, it includes the comprehensive abilities, notions, habits, disposition and behaviour that people acquire as members of a specific population demographic, culture or society (Eriksen, 2001). This definition of culture also carries a basic paradox, the relevance of which is pivotal in this study, primarily because culture refers both to a basic similarity within humanity, as well as acquired cultural differences; in other words *assigned* and *ascribed* culture; respectively, that which we are born with or born into, and that to which we ascribe or assign our energies. In a similar sense, culture refers to "basic similarities and to systematic differences" between human beings across a particular demographic (Eriksen, 2001, p.3). Within the scope of this study, it is suggested that this definition serves three theoretical positions, all undisputed, uncontended and highly applicable herein. Firstly, one can expect to find two main phenomena within a personality, both universals and specificities within personality structure, as well as considering the undisputed contextual influences that exert themselves, socially, politically and historically, upon the individual (McCrae, 2002a). Secondly, that the interrelationship between personality and culture is undisputed amongst cultural psychologists and social constructivists, in so far as personality and culture are inseparable elements (Rolland, 2002). This approach supports research aimed at investigating whether personality is shaped by culture, because then what logically follows is predictable and subtle variation across cultures. Finally, the interception between language and culture is uncontended amongst socio-cultural anthropologists, and to some extent social psychologists, as this research indicates that language is formed and flavoured with culturally significant symbols and meanings (Geertz, 1975; Marcus & Fischer, 1986).

In similar vain a study looking at the NEO-PI-R in Shona by Piedmont, Bain, McCrae and Costa (2002), indicates the poignant interrelationship between culture and language, and how personality finds expression using these variables. They posit that while personality is partly

unique to an individual, it is also partly the product of centuries worth of collective cultural experiences. All this experience would include both heritable aspects and ambient events, which help form national identity and then personality within it. Heritable aspects, such as cultural specifics, language, traditions and ingrained systems of belief, reasoning and value, as well as the flavour of ambient events such as political, historical and social change and movement, contribute to the cultural specificities that find expression through universal structures of personality. Especially in South Africa where rich collective experience is less the exception, and rather the rule, the role of what I would call, latent culture is an important part of understanding the shape of a 'South African personality'. Although this term is my own, it is similar to Hofstede and McCrae's (cited in Gibson, McKelvie and DeMan, 2008) *collective cultural programming*; however, I choose to further define it, uniquely, as being inspired from a long anthropological tradition of cultural congruency, as well as the influences of evolutionary psychology (Geertz, 1975; Larsen & Buss, 2005). Latent culture can be envisioned and understood as the underlying cultural experiences of recent times and of old, which influence the ways that an individual understands his/her place in the home, the community or the world. Latent culture is a complex persuasion that affects the expression of personality, because it is heavily laden with collective cultural experiences, aspects of national character, historical contexts, language, family and culture. For the most part, latent culture is not part of the active, conscious existence of an individual; it lies dormant in the parts of the mind that Freud (2003) called the *preconscious* and the *subconscious*, and influences shape and flavour of an individual's personality. With an understanding of this concept, it would be sensible to bear in mind the role of latent culture for the South African audience (or any audience for that matter) when one considers the implementation of culturally appropriate assessment in the community.

In the 1930's, anthropologist Edward Sapir set out to theorise psychologically of how mind, or person, is constituted in and thought through culture, language and history (Sapir, cited in Squire, 2000). There could be no more appropriate a way to describe the intersection of personality, culture and language in a particular space (and place) in time. In turn, when one acknowledges that South African cultures embody vast and systematic variations in language, comprehension and lingual abilities, one also considers the appropriateness of the NEO-PI-R in a South African context, owing to the fact that it was developed in a foreign context. Rolland

(2002) suggests, what is appropriate is to question whether the NEO-PI-R, and by extension the FFM, may exclusively reflect the idiosyncrasies of American culture and language. Similarly, one may begin to probe the assumed universality of the FFM of personality using a culturally and lingually sensitive perspective, which is essentially one of the tasks of this study.

Research by Piedmont, Bain, McCrae and Costa (2002) comprehensively illustrates these same issues of applicability and appropriateness of the NEO-PI-R in Southern Africa, and further indicates the powerful role that language and culture play in an individual's test performance. Piedmont et al. (2002) used 378 Zimbabweans, who were all bilingual and 'competently skilled' in both English and Shona, and sought to explore the appropriateness of the NEO-PI-R in context, and ultimately the applicability of the FFM on a Zimbabwean audience. They utilized both language versions of the NEO-PI-R in comparison, and searched for replication of five personality factors. Piedmont's et al. (2002) endeavour provides important support as well as thought-provoking critique for research regarding the appropriateness of the NEO-PI-R for South African audiences. Since Zimbabwean lifestyles, much like many South African lifestyles, are rooted in collectivist experience, this characteristic lends itself to pertinent scrutiny regarding the cultural and sociological development of personality, which is of particular importance to this study (Piedmont et al., 2002). The authors questioned the applicability of using Westernised, or non-standardised concepts and instruments on their Zimbabwean candidates, and also challenged its subsequent relevancy in context. Their findings included issues of bias and equivalence, where in many cases there was no single Shona word to convey the more abstract notions contained in the American English version, as well as issues of trait replication for Openness, Extraversion and Agreeableness (Piedmont et al., 2002). This indicates that some concepts within the NEO-PI-R have no direct equivalents in the Shona language and larger Zimbabwean cultural milieu, and that this translative limitation needs to be examined with respect to the applicability of the FFM in that particular context. In support of these findings, similar results using the NEO-PI-R in Southern Africa are evidenced in studies by Heuchert et al. (2000), Heaven et al. (1994), Horn (2000) where replication of the five factors was problematic from a cultural and lingual perspective. These studies will be discussed in detail in the section on comparative research to follow.

At this juncture, it is important to note that it is exactly this type of cross-cultural and language-sensitive research that highlights concerns of appropriateness within South African personality assessment. When using the NEO-PI-R in the South African context, issues of bias are realistic stumbling blocks. Without providing a suitably appropriate version, both culturally and lingually, the viability of several test items falls into question. However, and very importantly, the subsequent cultural and lingual shortcomings of the NEO-PI-R in its current form, for South Africans, are ultimately of more theoretical value. By investigating the structure and development of personality in the South African context, we may begin to fully understand and accommodate it psychometrically, and theorize more substantially how indigenous variables such as language and culture affect the content of personality (Piedmont et al., 2002). In the long run, continued pursuance of these issues, as is the essence of this study, will only improve the possibility of applying a reliable and valid indigo-cultural[9] perspective to personality assessment.

According to Tesch (cited in Babbie & Mouton, 2004) the characteristics of language and its host culture, continue to stimulate interest on four primary levels. In considering these levels it is important to pay cognisance to the persuasive role that language and ultimately culture play in understanding, meaning-making and living as a social being in a multicultural context; firstly, language is a global and cultural form of communication, with regard to both its cognitive process and its culture-bound content. In fulfilling this function, language can be seen as a mirror to culture, and forms a means with which to describe socio-cultural existence. Secondly, language is a medium of discovery with which to identify patterns, regularities, themes, norms, taboos and differences. We use speaking, listening and reading – the main expressions of language – as a way to make social and emotional connections with the people around us. Thirdly, language is the means with which we comprehend meaning, action and consequence; it is the backbone of an individuals conscious existence. Finally, language is a reflection of the self and others, through interpretation of words or meanings. Through language, individuals are able to understand themselves, connect themselves with others, understand their relationship to other people and objects in a specific context and the environment, and further make sense and systems of meaning using those relationships. By understanding the writings on language by

[9] See Figure 1 in chapter one's discussion of the trait approach to personality

Tesch (cited in Babbie & Mouton, 2004) we reveal the vital role that appropriate use of language may play in psychometric testing.

3.3 Comparative and supporting research for a multicultural study

Ortner (1974) argued that culture must be seen as the tangible and non-tangible webs of meaning that people spin around themselves. What this means is that people live in cultural networks that are encoded with many levels of meaning, symbols and specific environmental stimulus. Therefore, language as theorised by Tesch (cited in Babbie & Mouton, 2004), may then be thought of as the material with which we weave these cultural webs. It is certainly acceptable to support the claims that culture and language significantly influence an individual's ability to conceptualise and process meaning in a particular setting. By this rationale, the study intends to make the following point about using the NEO-PI-R in its original form in South Africa; when the test medium is English and when it is *formed and flavoured* by a foreign culture, that English material looses parts of its appropriateness, relevancy and meaning to its receiving audience. Furthermore, in some cases the use of English is a confounding factor, especially when it is not the home language of the receiving audience. Hence, the role that language and culture play in an individual's system of meaning-making is to assist in making informed, contextual and appropriate inferences about people, concepts or objects in the environment. To illustrate this principle, Poortinga, Van De Vijver and Van Hemert (2002, p.282) propose a florid but invaluable analogy by Przeworski and Teune; "For specific observation a belch is a belch and nepotism is nepotism. But within an inferential framework a belch is an 'insult' or a 'compliment' and nepotism is 'corruption' or 'responsibility'".

The various studies exemplified herein, which provide comparison and support for this one, are essentially underpinned by cultural and lingual dynamics. Marsella *et.al* (cited in Wallis & Birt, 2003) has argued that personality and culture (and I would therefore include language, as has been, and will be established herein) cannot be separated at all. Indeed, our understandings of personality are wholly and thoroughly language-laden. When one speaks of personality or characteristics, one uses language to reason, understand, describe and distinguish, and this use of language becomes indigenised or culturally specific within its context. This argument

bolsters the point that psychometric instruments such as the NEO-PI-R are likely to contain Western, or specifically American cultural specificities. In turn, this version of the NEO-PI-R can never be expected to fully capture, nor can it account for, the unique South African subtleties and nuances that defines our national identity. There is a need to consider the shape of South African speech and lingual patterns, cultural thought, sentence structures as well as the methods by which we reason. Furthermore, there is a need to consider the test's development in English, which is not the home language of many South Africans.

In keeping to the same sentiments and supporting the vital theme of lingual appropriateness, it is important to use the following example as a precipitant for the argument to follow, albeit non-African. Christine Satz-Miracle has a long-standing interest in lingual and cultural difficulties regarding personality and intelligence testing in Latin America. Satz-Miracle (1981) identified groundbreaking problems associated with the cross-cultural use of tests that had not been standardised for a receiving audience, despite the presence of Spanish as a home language throughout most of Latin America. Her research prompted significant interest in the role that culture plays in an individual's ability to understanding written and spoken language. Some of her earliest work (1981) was conducted using the Wechsler Intelligence Scale for Children (WISC) and its Spanish equivalent, the *Escala de Inteligencia para Niños (EIN).* The EIN was originally translated from the American English version of the WISC, for use in Puerto Rico only, but was subsequently widely used throughout Latin America until recently. Using the EIN on a sample of Bolivian, Chilean and Peruvian Spanish-speaking children, Satz-Miracle focused on lingual biases and aspects of equivalence in the response sets and reasoning of these children, and found profound evidence of bias. The problems associated with the cross-cultural use of the EIN revealed that the differing linguistic nuances in Spanish across contexts, as well as the respective cultural and environmental heritages across contexts, were largely responsible for scoring discrepancies between those for whom the test had been intended (Puerto Rican Spanish-speakers), and those for whom the test was eventually used (other Latin American Spanish-speakers). Succinctly, the Spanish that would be fully understood and appropriate for Puerto Ricans was misinterpreted and inappropriate for the other South American cultures, even though they were Spanish-speaking nations. This indicates that the cultural influences upon language were certainly present.

The importance of this comparative example is of critical relevance to the discussion of lingual bias and equivalence in testing, and particularly the use of the American English version of the NEO-PI-R for South African English-speaking audiences. As similarly hypothesised by Satz-Miracle in her research (1981), many potential test candidates in South Africa, regardless of their cultural or lingual groupings, can "speak English" and would presumably be able to attempt taking the NEO-PI-R, as is currently practiced. However, besides being a rather obvious ethnocentric assumption, this may also be a problematic one on two levels. Firstly, for English-speakers across South Africa, the localised and context-specific nuances inherent in South African English, combined with the cultural and environmental heritages in South Africa, are likely to be markedly different to nuances and enviro-cultural heritages in American English. The resultant may then be an element of lingual inequivalence and relatively obvious language bias[10], similar to that revealed by Satz-Miracle. The second problem is less covert, and involves South African test-takers whose home language is not English, even though they may "speak English"; it seems realistic to posit that these individuals from varying cultural and lingual groups, are likely to be inhibited in their test performances simply because they may not have had the same English exposure as home language English-speakers. This problem is further compounded by contextual lingual inequivalence as discussed above.

There has been several contemporary, comparative research efforts conducted on the NEO-PI-R in and around South Africa, specifically focusing on the various issues that surround language, culture and the applicability of the FFM on Southern African audiences. Piedmont, Bain, McCrae and Costa (2002) suggest that studies conducted on Southern African societies using the five factor structure of personality are the furthest generalisations attempted so far, even though the respondents are fully literate and competent in English, and have extensive exposure to Westernised culture through popular media. This being said, continued research by McCrae (2000, 2002a, 2002b) and McCrae and Costa (1987, 1999) has shown that measuring the FFM in a variety of different languages and cultures has risen above the critiques of cultural and indigenous purists, and is widely thought to be surprisingly robust. The following studies provide further support and similar findings, as has been illustrated thus far.

[10] This will be demonstrated in the data analysis of this study

Heaven, Connors and Stones (1994) used 230 South Africans from a predominantly Black University and 186 Australian university students, and focused on finding replication of the five personality factors using lists of English adjectives. While the five factors replicated nicely for the foreign students, the South African sample did not provide much support for the FFM. The results were problematic on three levels, which not surprisingly were home language, response-sets and basic personality structures. The reason why these results are extremely useful for research involving the FFM (or the NEO-PI-R for that matter) is that it clearly illustrates the foundation issues of psychometric assessment in a multicultural non-Western society, such as South Africa. Firstly, the use of advanced English vocabulary and sentence structures, constructed in a foreign context, is likely to create at the very least, hesitation or mild confusion for English-speakers, and definitely a barrier in interpretation and understanding for those using English as a second (or third) language. Secondly, it is possible that the styles with which South Africans respond to test items, and perhaps testing in general, differs from their Western counterparts. Thirdly it is possible, although currently not established, that the FFM does not adequately represent personality structures in Southern African societies. Church & Katigbak (2002, p.148) comments on the notion of personhood in Westernised and industrialised Far Eastern societies; "any cultural differences in the validity and utility of trait constructs will be at most a matter of degree" and the evidence to date, is rather limited to these regions, and remains unchartered territory in African, and especially Southern African societies. What this importantly illustrates, is that the questions surrounding the applicability of the FFM and appropriateness of the NEO-PI-R, cannot be successfully answered and accounted for without extensive research therein. This study on language bias in the NEO-PI-R is a modest, but integral contribution towards further research.

Some six years after Heaven, Connors and Stones' (1994) research, well into South African democracy and expedient movements towards educational and vocational equality, Heuchert, Parker, Stumpf and Myburg (2000) using the NEO-PI-R, obtained more promising results than Heaven, Connors and Stones (1994) did. Arguably, these good results could be due to extensively increased exposure to Western popular culture and the overwhelming advantages of South Africa's relative political freedom. In the study, a mixed racial group of 408 South African university students were given the NEO-PI-R in English. A partial success, the results

showed that the five-factor structure of personality was obtained. However, the five-factor replication was clearer among the White English-speaking students than the other students. Regardless of race, those for whom English was not a home language (first language) reported significant difficulty in understanding the abstract concepts contained in the NEO-PI-R. The domain that was of particular concern to Heuchert et al. (2000, p.121) was Openness to Experience; the root of this concern is not yet conclusive, although "the exclusive reliance on the English version…might have been responsible". This potentially can mean two things; either the reliance on Westernised English was too unfamiliar for South Africans, therefore creating barriers in comprehension and appropriateness, or that the actual domain was a poor representation of indigenous South African personalities, therefore indicating the relative inappropriateness of the FFM in South African culture. Hence, a firm and robust feature of this study has been highlighted; the possibility of the NEO-PI-R's inappropriateness for South African audiences cannot be overlooked, and needs to be acknowledged and addressed in the way of future standardisation. Yang and Bond (cited in Heuchert, Parker, Stumpf & Myburg, 2000) suggest that continued use of the American English version is undoubtedly an imposed etic paradigm, which will continue to provide camouflage for the intimate interceptions between language and culture. In doing so, it is difficult to determine whether there are true cultural differences in the nature of personality structure, or whether the English terms fall short in conveying the NEO-PI-R's concepts, or whether it could be both.

In an unpublished thesis by Horn (2000) the Xhosa translation of the NEO-PI-R was examined. The results expose translation as a factor for contemplation and investigation, although it is not of direct interest in this particular study. Essentially what is of interest to this study, is Horn's (2000, p.73) reported problems of translation, and in specific that it was extremely difficult to do, in part because "the Xhosa language has a restricted vocabulary". The concept of 'restricted vocabulary' is an important one in the scope of this study, and overwhelmingly so with individuals for whom English is not the home language. According to Piedmont et al. (2002, p.158) the vast majority of languages spoken within central and Southern Africa – with the exception of Afrikaans and colonial imports such as English, French and Portuguese – are from the "Bantu branch of the Niger-Congo language family, and [are] unrelated to any European or Asian languages". These languages have been formed and flavoured within a cultural milieu

that is distinctly African, and in many cases do not share the same lingual, conceptual and structural characteristics. Indeed, communication and understanding is steeped in, what Piedmont et al. (2002) describe as centuries worth of cultural experiences, beliefs and practices. This can be a difficult situation for many imported psychometric instruments, and particularly the NEO-PI-R for South Africans, because the creators of the test have not had the opportunity of 'sociocentric' orientation, that is living and working with the local people (Piedmont et al., 2002). Therefore the lingual creation of the test cannot be expected to 'speak to' a culturally specific audience, nor can it be expected to contain the many subtleties in thought, values and behaviour that subsumes a national identity, or a cultural connectedness; for example, our many South Africanisms. As Horn (2000) pointed out, Southern Africans are in general more inclined towards global, intuitive, collective and expressive cognitive functions, than to the more detail-orientated, analytic and abstracted reasoning approaches that characterize Western thought processes. The valuable insights taken from Horn (2000) and Piedmont et al. (2002) indicate that some concepts and words contained in the NEO-PI-R may not possess cultural relevance for South Africans, and may not have lingual equivalents in African languages, be it for administrative translation or an individuals personal reasoning and meaning-making.

The findings discussed in this chapter are not limited by any means to the NEO-PI-R. Using the 16PF (SA92), Abrahams and Mauer (1999) as well as Wallis and Birt (2003) support similar findings of bias in personality instruments from the West. Both studies followed the same methodology in identifying problematic language in the 16PF. Not surprisingly the findings, separated by only four years, indicated that the 16PF did indeed contain words that were problematic for English speakers, and even more so for second language English speakers. Both studies concluded that, firstly, more research needed to be conducted with the 16PF in order to more fully understand the extent to which language affects test scores, and secondly, that until this concept was better understood *and* addressed psychometrically, the test would continue to exhibit bias towards some English speakers and almost all second language English speakers.

In Wallis and Birt's (2003) study the participants were required to provide lists of adjectives for certain words that were found in the inventory. The study's focus was to identify the

seriousness of the problems with the language in the 16PF, and then to evaluate the source of these problems. As mentioned previously, the authors found that both first language and second language English speakers "struggled with the language contained in the 16PF (SA92)" (Wallis & Birt, 2003, p.189). However, unlike Abrahams and Mauer, these authors went on to explore the source of these difficulties and found that participants did in fact understand certain words contextually, although they were prevented from displaying this through the inventory's controlled response format. This is an important finding because a good deal of an individual's vocabulary, understanding and comprehensive abilities in language is directly related to the context within which they are found. Further, it has been suggested that the several factors such as the prevailing historical and socio-cultural climate, traditional systems of meaning, collective cultural experience and the ideals and values of the dominant culture in fact influence the use of a language in a given context (Abrahams, 1996; Mpofu, cited in Vogt, 2009). Naturally, the South African context is an all-important factor to consider when pairing up with the use of a) a culturally congruent form of a test, b) the language it employs, like English for example, and c) whether the theoretical assumptions and conceptual foundations of the test are appropriate for that user group in that context. The NEO-PI-R for example is culturally congruent with an American English speaking user group, and is rooted in a Western socio-cultural setting. Furthermore, it is also theoretically and conceptually rooted in the FFM, and it is becoming more apparent with ongoing research that this rootings may not be appropriate for a South African user group (Abrahams & Mauer, 1999; Horn, 2000; Piedmont et al., 2002; Wallis & Birt, 2003).

As is the case with the studies using the NEO-PI-R that have been discussed previously, studies using the 16PF also illustrated that significant, recurrent differences occur in certain domains and facets of personality structure across language groups. What has yet to be established, is whether this is due to noteworthy problems with the language contained in certain imported inventories, or whether the FFM is perhaps not entirely appropriate in the South African context. Indeed, certain cultural differences may not be accounted for by the FFM, and westernized English lexicons may not be an ideal match for South Africans lexicons; therefore it is probable that test scores may continue to exhibit this bias until appropriate revisions are suggested and/or initiated (Heuchert, Parker, Stumpf & Myburg, 2000; Vogt, 2009). What this

means in the scope of the present study, is that the finer details and less overt concepts or lingual nuances of the South African English lexicon are being compromised and even lost across a language or cultural barrier. The proverbial barrier in the present study is between the South African and the American socio-cultural and lingual milieus.

These discrepancies may be attributed to socio-cultural and lingual specificities that contrast with the concepts contained in an unstandardised instrument, such as the NEO-PI-R. Very often, cross-cultural studies inevitably involve using a test that is developed in a particular cultural setting, usually 'Western' or 'Euro-American'. In many cases, these very same tests, such as the NEO-PI-R and the 16PF, are readily utilized in their original forms in the South African setting (Abrahams, 1996; Abrahams & Mauer, 1999; Heaven & Pretorius, 1998; Heuchert, Parker, Stumpf & Myburg, 2000; McCrae & Costa, 1997; McCrae & Terraccianno, 2005; Piedmont, Bain, McCrae & Costa, 2002; Prinsloo & Ebersöhn, 2002; Van Eeden & Prinsloo, 1997; Wallis & Birt, 2003). Under these circumstances it is difficult to imagine how a multicultural South African audience, would be at an advantage on any more than the occasional item, even before a cultural or language barrier is considered (Poortinga & Van de Vijver, 1987).

Therefore, what is important to internalise as a contemporary researcher in South Africa, is that culturally relevant advancements in psychometric instruments such as the NEO-PI-R, cannot rely solely on western counterparts as the general standard. Instead, contributions and advancements to the lingual appropriateness of NEO-PI-R (such as the endeavoured contributions of this study) must address specific characteristics of the 'South African culture' or the 'South African personality' in order to become an appropriate measure in context (Squire, 2000). In dealing with these issues one may then begin to question the FFM in the South African context. Vogt (2009) suggested that the FFM does not account for some crucial aspects of the South African cultural setting, namely Individualism/Collectivism as a part of personality. Therefore, personality theory in South Africa may need to investigate this possibility (or probability) in more detail. The results would no doubt indicate that a more comprehensive description of personality in the South African context needs to be included in

future personality assessment models and revisions. Therefore, in exploring language bias, this study is just one amongst many, needed to develop this area in South Africa.

4

Methods

4.1 Research Aims

The primary aim of this research is to explore language bias in the NEO-PI-R by using a volunteer sample of postgraduate psychology students. This research intends to contribute to the increasing interest and understanding of personality assessment in South Africa, by identifying whether specific items and/or specific scales from the NEO-PI-R are problematic and/or inappropriate for audiences in the South African context. This study also address whether participants experience difficulties in understanding particular words, sentences and the abstract concepts within the NEO-PI-R. In doing so, the researcher may be able to identify specific aspects of the NEO-PI-R that elicit the most pronounced difficulties and dissatisfaction amongst participants, and why this may be so.

4.2 Rationale

The issues of the multicultural applicability and appropriateness of psychometric instruments has been a contentious issue in the field of personality testing since the 1960's (Abrahams, 1996; Abrahams & Mauer, 1999; Heuchert, Parker, Stumpf & Mybrugh, 2000; Prinsloo & Ebersöhn, 2002). However, it has only been in the last 15 years that research has focused on the South African applicability of certain instruments, exploring issues of general relevance, validity, bias and fairness (Abrahams, 1996; Abrahams & Mauer, 1999; Heaven & Pretorius, 1998; Heuchert, Parker, Stumpf & Myburgh, 2000; Wallis & Birt, 2003). Particularly over the past 10 years, Southern African researchers have explored these topics using the NEO-PI-R as well as other personality inventories, such as the 16 Personality Factor questionnaire (16PF; Abrahams, 1996, 2002; Abrahams & Mauer, 1999; Prinsloo & Ebersöhn, 2002; Prinsloo & Van Eeden, 2005), Eysenck's Personality Questionnaire (EPQ; Van Hemert, Van der Vijver,

Poortinga Georgas, 2002), the 15FQ personality test (Meiring, 2007) and the Adjective Check List (ACL; Piedmont, Bain, McCrae & Costa, 2002). In all cases the authors generally found support and motivation to either standardise certain aspects of the inventories using South African normative populations, or raise important and reflexive queries regarding the appropriateness of certain inventories in the Southern African context. However, despite ongoing inquiry there remains relatively little material that pays exclusive attention to the NEO-PI-R and the differences and difficulties experienced by non-English-speaking South African participants. In particular, research on the applicability and language bias on the NEO-PI-R is lacking. Although there is a small, but growing body of knowledge that focuses exclusively on bias and fairness of personality assessment in the South African context (Abrahams, 2002; Laher, 2008; Meiring, Van der Vijver, Rothman, & Barrick, 2005; Poortinga & Van de Vijver, 1987; Van Eeden, & Prinsloo, 1997), it is important to continue intercepting this available knowledge and producing new developments. Situated within this context, this study seeks to explore the appropriateness of the NEO-PI-R in the South African context, concentrating on the extent to which language influences an individual's responses. By this rationale, the research will render both statistical evidence and rich, descriptive accounts regarding a multicultural South African perspective on personality assessment using the NEO-PI-R.

4.3 Research Questions

The study involved both a quantitative phase and a qualitative phase; therefore the research questions are presented separately for each phase.

4.3.1 Quantitative research questions

1. Does home language influence responses to any of the personality scales on the NEO-PI-R?
2. Does home language influence responses to any of the items on the NEO-PI-R?

4.3.2 Qualitative research questions as per the open-ended section of the questionnaire

1. Were there any items of the NEO-PI-R that were identified as inappropriate, and what were the reasons for this?

2. Were there any items of the NEO-PI-R that South African audiences did not understand, and what were the reasons for this?

4.3.3 Qualitative questions as per the focus group discussion guidelines

1. What is your understanding of personality?
2. What is your understanding of personality in the South African context?
3. How can personality be explored with language and adjectives within language?
4. Describe and elaborate upon the relationship between language and personality.
5. Describe the influences that culture has upon language and personality.
6. Discuss the use of the American-English version of the NEO-PI-R as it is utilized for South African audiences.
7. Did you find the language problematic in the questionnaire you answered?
8. Were there any words, phrases or concepts that you found difficult to understand?
9. What were the reasons behind the difficulties that you experienced while completing the NEO-PI-R?

4.4 Hypotheses

4.4.1 Quantitative hypothesis

Language influences responses to the personality scales of the NEO-PI-R.
Language influences responses to items of the NEO-PI-R.

4.4.2 Qualitative hypothesis

There are no hypotheses for the qualitative questions

4.5 Sampling

In this study a non-probability convenience sample consisting of volunteers from a postgraduate psychology class was used. The research was a non-experimental cross-sectional research design. Although the sampling took form across both quantitative and qualitative phases of the research, the sampling method was consistent throughout. The postgraduate class in its entirety consisted of approximately sixty students. Although not all the students participated, the final quantitative and qualitative samples represented acceptable demographic variety as presented in Table 4.1[11]. This means that the sample group was mostly women and a few men, all of which comprised at least five population groupings and represented speakers of several of South Africa's eleven official languages as well as some international languages. The numerous advantages and disadvantages of using students are well documented in related research on the 16PF using South African student populations (Abrahams & Mauer, 1999; Abrahams, 1996; Laher, 2008), and are elaborated upon in the discussion to follow.

4.5.1 Role of student population

Using a student sample has in the past, been a highly critiqued practice, especially so in South Africa. One of the major arguments against the use of students in general, and particularly in South Africa, is that they do not represent the greater population accurately. This begs the question as to why this study chose to use psychology students exclusively. An argument put forward by Abrahams (1996, 2002) helps to highlight the sampling rationale of this study, as well as the numerous advantages of using a student population; to this end, some good points are made in favour of using students.

From a general perspective, contemporary trends in psychometric research show that students are often used, and that they represent a relatively homogenous group, especially for research addressing bias, fairness and appropriateness of psychometric instruments. In these cases, where the constructs under study are sensitive to the composition of the sample, the relative homogeneity of a student group ensures a degree of reliability. Furthermore, when using

[11] See Table 4.1 for the descriptive statistics for the quantitative sample group

students it can be assumed that the effects of language proficiency and test wiseness should be minimal; in the case of this study, the NEO-PI-R was administered in English to students attending a postgraduate degree at an English medium university (Abrahams, 1996). From a more detailed perspective, psychology students in specific possess a weighty familiarity with the standards and expectations of research in the field of psychometrics, as well as the seriousness of such studies[12].

In South Africa it may be assumed that a vast majority of individuals have never encountered psychometric instruments. The researcher's own experience and observations[13] using the SSAIS-R indicate that a majority of participants had never been exposed to a psychometric instrument before, did not understand the purpose of assessment, and did not understand many of the instructions and actual test items. It goes without saying that in order to do a thorough cross-cultural analysis of the NEO-PI-R, at an entry level to the problem of appropriateness and language bias, it is helpful to ensure that the sample has had the opportunity to acquire the knowledge and skill needed to perform at least adequately, in English, on instruments such as the NEO-PI-R. Importantly, since the students were reading degrees at a postgraduate level, it was further assumed that they had had the opportunity to acquire the knowledge and information needed to perform at least adequately on the NEO-PI-R.

4.5.2 Quantitative phase

The quantitative exploration of language bias was done using a convenience sample of volunteers from a postgraduate psychology class. The total available sample population consisted of approximately sixty psychology students. The researcher was able to gain access to fifty-one of the students, and accordingly distributed the questionnaires.

[12] At a postgraduate level, students are expected to propose, conduct and analyse their own research interests, as partial fulfilment towards their honours degree. Therefore, it is assumed that these students are familiar with, have received teaching about, and practical experience in the field of psychometrics, research procedure & methodology.
[13] During 2006, towards the fulfilment of an honours degree, the researcher was required to complete a minimum of 720 combined clinical hours at a Non-profit Organisation, under constant clinical supervision. This consisted of general psychological and trauma counselling, as well as the administration, analysis and interpretation of certain psychometric instruments, such as the SSAIS-R.

Variables under study		Frequencies	Percentages (%)	Cumulative percentages (%)
Gender	male	3	10.7	10.7
	female	25	89.3	100.0
Population group	Black	6	21.4	21.4
	Coloured	3	10.7	32.1
	Indian	4	14.3	46.4
	White	14	50.0	96.4
	East Asian	1	3.6	100.0
	Other	0	0.0	.
Home language	Afrikaans	1	3.6	3.6
	English	20	71.4	75.0
	isiNdebele	0	0.0	75.0
	sePedi	0	0.0	75.0
	siSwati	0	0.0	75.0
	Sesotho	1	3.6	78.6
	xiTsonga	0	0.0	78.6
	Sestwana	1	3.6	82.2
	tshiVenda	0	0.0	82.2
	isiXhosa	2	7.1	89.3
	isiZulu	2	7.1	96.4
	Chinese	1	3.6	100.0
Home language collapsed	English	20	71.4	71.4
	Non-English	8	28.6	100.0
English Reading	Very weak	0	0.0	.
	Poor	0	0.0	.
	Fair	0	0.0	.
	Good	3	10.7	10.7
	Excellent	25	89.3	100.0
English Comprehension	Very weak	0	0.0	.
	Poor	0	0.0	.
	Fair	0	0.0	.
	Good	7	25.0	25.0
	Excellent	21	75.0	100.0

Table 4.1. - Sample descriptive statistics for the quantitative phase

Of the fifty-one questionnaires distributed to the students, twenty-eight completed questionnaires were returned, three incomplete questionnaires were returned, and twenty questionnaires were unaccounted for. Therefore a final sample group of twenty-eight consenting student volunteers were assembled. They consisted of twenty-five females and three males, with a mean age of 23 years. Therefore the researcher had a 60% response rate from the students, in which 90% of the returned questionnaires were completed in full and suitable for analysis purposes.

The volunteers represented five population groupings, namely Black, Coloured Indian, White and East Asian. Amongst the volunteers, a total of six out of the eleven official South African languages were represented, and one foreign language was represented, namely Chinese. It must be stated that eight out of twenty-eight of the volunteers spoke English as a second language. All twenty-eight volunteers were at least bilingual, and twelve of the volunteers speak three languages or more. The various different home languages were operationalised by collapsing them into two levels, namely English and non-English. This enabled the researcher to more insightfully assess the effect of language impacting on the participants' understanding of words, items or concepts in the NEO-PI-R. Each of the twenty-eight volunteers had rated their English reading and comprehension skills as either very good or excellent, generally indicating an advanced level of English skill across the group. The present study regards this combined skill as English proficiency. The National Inquiry Services Centre of South Africa (NISC) defines English proficiency as an individual's ability to speak and perform in an acquired language (www.nisc.co.za). Proficiency is further explained as fluency and competence in that acquired language, and from a cultural relativist perspective, does not necessarily assume literacy. This is an important perspective for non-Western communities in which literacy levels are lower than in Western communities. Therefore, in the present study English proficiency is defined as a high level of English skill, and includes both speaking and performing (reading and writing) English, as per the NISC's definition.

4.5.3 Qualitative phase

The qualitative phase consists of two separate portions of data, each of which utilize different sample groups, namely the quantitative sample from the questionnaires, and qualitative sample from the focus groups.

Qualitative sample for the questionnaire

The qualitative data was completed as part of the questionnaire that was given to the students. Therefore, the same twenty-eight volunteers who comprised the final quantitative sample group – and therefore completed the quantitative portion of the study – make up the qualitative sample for the questionnaire analysis.

Qualitative sample for the Focus Groups

In order to fulfil the broader qualitative aims for the study, the class of fifty-one postgraduate students – those who had originally participated in the quantitative phase - were approached. Once again, the qualitative sampling method was a non-probability convenience sample. Of the fifty-one psychology students, a total of sixteen expressed interest in volunteering for the focus groups, and provided the researcher with their contact details and availability. The researcher then set aside three separate days to conduct focus groups; one group per day during lunchtime. The volunteers were organised into one of three focus groups according to the individual's schedule; in other words, the volunteers were able to freely select a suitable time-slot (as per their schedule) for focus group participation. Of the sixteen interested students, a final qualitative sample[14] of ten students were available for two focus group meetings. Three of the volunteers for the potential third group withdrew from the study, and ultimately the third focus group was dissolved. Therefore the qualitative sample of ten volunteers was representative of approximately 20% of the overall participating body of students.

Focus group one consisted of a group of five female volunteers. The group represented Black, Coloured and White population groupings, and a home language variety of Afrikaans, English, isiZulu and seSotho. Focus group two consisted of a group of three men and two women. The

[14] See Table 2 for the descriptive statistics for the Focus Group sample

group represented Black, Indian and White population groupings and a home language variety of English and isiXhosa. Overall the groups represented six first language English speakers and four second language English speakers. These categories were collapsed into English and non-English, for statistical purposes, as presented in Table 4.2.

Variables under study		Frequencies	Percentages (%)	Cumulative percentages (%)
Gender	male	3	30.0	30.0
	female	7	70.0	100.0
Population group	Black	3	30.0	30.0
	Coloured	1	10.0	40.0
	Indian	1	10.0	50.0
	White	5	50.0	100.0
	East Asian	0	0.0	.
	Other	0	0.0	.
Home language	Afrikaans	1	10.0	10.0
	English	6	60.0	70.0
	isiNdebele	0	0.0	70.0
	sePedi	0	0.0	70.0
	siSwati	0	0.0	70.0
	seSotho	1	10.0	80.0
	xiTsonga	0	0.0	80.0
	Sestwana	0	0.0	80.0
	tshiVenda	0	0.0	80.0
	isiXhosa	1	10.0	90.0
	isiZulu	1	10.0	100.0
	Other	0	0.0	.
Home language collapsed	English	6	60.0	60.0
	Non-English	4	40.0	100.0

Table 4.2. - Sample Descriptive Statistics for qualitative phase

4.6 Instruments

To investigate the aims of this research, a questionnaire consisting of three sections, namely the demographic section, the NEO-PI-R, and three open-ended questions was used in this study. The combined sections of the questionnaire were intended to gather both quantitative and qualitative data regarding language bias in the NEO-PI-R.

4.6.1 Quantitative phase

Demographic section

The questionnaire requested demographic information, namely age, gender, population group, home language/s (where, if more than one, respondents need to rank those languages by spoken frequency), and highest level of education and self-evaluated level of English proficiency. The variable of home language was used for statistical analysis, while the remaining variables were used for descriptive purposes only. The demographic section of the questionnaire was included to establish the ethnic and cultural standing of the sample, therefore introducing rich, cultural information, which greatly assisted the explorative means of this study.

The NEO-PI-R

The NEO-PI-R is a self-report psychometric instrument consisting of 240 items. It is available in two forms: Form S, which is used for self-rating, and form R, which is used for rating someone else. Within these two forms of the personality inventory, the test items are almost identical, the only exception being the altered pronouns; "I" becomes "he" or "she". Given the nature of this study, Form S was distributed to all volunteers.

Form S assesses personality traits as postulated by Costa and McCrae (1992). Its theoretical foundations are rooted in the Five Factor Model of personality, which highlight five personality factors for use in the NEO-PI-R. These factors are Neuroticism, Extraversion, Openness to Experience, Conscientiousness and Agreeableness[15]. The NEO-PI-R utilizes these factors and their descriptive qualities, but calls them domains and facets. In the NEO-PI-R each domain is measured by 48 items, which are further sub-divided into six sets of eight items. These sets of items are called facets, and provide more specific information about the pivotal concepts within each of the domains. The facets are regarded as subsets of that domain. The subsets derive their characteristic qualities from the domain to which they belong, and may overlap or be mutually exclusive. The NEO-PI-R items are answered on a 5-point rating scale, ranging from "strongly agree" (4) to "strongly disagree" (0). According to Costa & McCrae (1992) the scales

[15] See Chapter 1 for a detailed summary of the five personality domains. Alternatively, see Appendix A for a detailed summary of the facets of each domain

are balanced to control for the effects of acquiescence, meaning that unusually high levels of agreement have been accounted for.

Reliability of the NEO-PI-R

Traditionally speaking, internal consistency and test-retest reliability are the most commonly used indices to evaluate the reliability of an instrument (Piedmont, 1998). Internal consistency is calculated to yield a value called coefficient alpha, and can be described as the degree to which items in a scale measure the same thing (Costa & McCrae, 1992). Taking this into concern, the implied theory behind the construction of the NEO-PI-R's scales is that the items will tap aspects of the trait that the scale is designed to measure, which ultimately once consolidated as an alpha coefficient, will yield a rich understanding of the quality of that trait within an individual (Costa & McCrae, 1992). Form S has acceptable internal consistency with alphas ranging from 0.56 to 0.81 for the individual facet scales, which are acceptable for scales with only eight items, and 0.86 to 0.95 for the forty-eight item domain scales. Retest reliability is a prerequisite to indicate for stability in a trait measure (Costa & McCrae, 1992). It refers to the extent to which individuals score similarly on two different occasions. Good retest reliability is essential for the efficacy of measurable personality traits, which are expected to show little difference over time (Piedmont, 1998). Costa and McCrae (1992) suggest that the NEO-PI-R is one of the few instruments that has demonstrated measurement of enduring dispositions, yielding alphas from 0.68 to 0.83 and from 0.63 to 0.79 for six and three year retests respectively. However, it must be stated that in some cross-cultural studies using the NEO-PI-R, the alpha coefficients for domain and facet scales are consistently lower than the norms for their American counterparts (Horn, 2000; Piedmont et al., 2002; Taylor, 2000). In a study using the NEO-PI-R for Shona speakers in Zimbabwe, a one-week retest scenario yielded alphas of 0.48 to 0.92 (Piedmont et al., 2002) in which respondents gave similar responses on both occasions.

Validity of the NEO-PI-R

The label of validity refers roughly to the success with which a scale measures the aspects it claims to measure (Piedmont, 1998). There are many different types of validity each accounting for different aspects of an instrument, such as content validity (the instrument appropriately

tests the range of characteristics that it is intended to test) or criterion group validity (the groups of individuals tested differ in their mean scores in theoretically predictable ways) (Costa & McCrae, 1992). However all types of validity must not be thought of as absolute properties of a scale (Costa & McCrae, 1992). This means that validity can change with different samples. Further, when it used for different purposes, it is very much a contextual concept that comments on the success of the instrument with each new administration. Considerable evidence shows that as measures of broad personality traits from a Western perspective, the NEO-PI-R scales show good validity in many ways and in many different samples. On the other hand, this degree of success does not always happen in all samples all of the time. Therefore it may be immediately presupposed that further research is required for new applications of the personality scales, and in specialised samples[16].

4.6.2 Qualitative phase

Open-ended responses in the Questionnaire

Following the NEO-PI-R, two open-ended questions appear at the end of the questionnaire. Each volunteer was required to complete this third section of the questionnaire, as part of the data requirements. The open-ended questions required the volunteer to assess aspects of appropriateness and comprehension from their point of reference. They were provided with an allocated space to list the words, items or concepts that they felt were inappropriate, and why, as well as those words, items and concepts that they did not understand, and why.

The researcher included the open-ended questions in order to assist the qualitative goals within the study, and to obtain concise and descriptive, individualised responses to the appropriateness of the language and the items found in the NEO-PI-R. This portion of the qualitative phase not only provided a means with which to mindfully engage in a reading of the data, alongside transcriptions of a focus group discussion, but also provided discrete identification of problematic language and items from the volunteers' point of view. In doing so, both volunteers and the researcher were able to pin-point problematic aspects of the inventory. The

[16] See recent research by Cheung *et al.* (2008) as well as research by Abrahams (1996; 2002) and Piedmont *et al. (2001)*

researcher recognised that the data was rooted in the subject's cultural and lingual perceptions, and not in a physical or psychometric reality. Thus, the analytic technique that was used was an uncomplicated dual focus, which reflected upon the volunteers' responses (Babbie & Mouton, 2004). The inherent advantage of this approach was that it allowed for maximum elaboration, interpretation and statistical support on the appropriateness of the language in the NEO-PI-R.

Focus Group Discussions

In order to further probe the qualitative aims of the study, ten student volunteers participated in focus groups that were run by the researcher. The focus group discussions explored the major themes of the research, namely ideas of what personality is, exploring the idea of a 'South African Personality', the factors that influence personality, the role of culture and language in personality, the use of the American-English version of the NEO-PI-R, and finally a rich elaboration on the problematic aspects within the NEO-PI-R[17]. The focus group questions were developed as an operationalisation of these major themes, and were piloted by the researcher to move in a sensible progression from the simplest concepts to the more complex. The researcher therefore first dealt with ideas and discussions around the concept of personality, and gradually built upon these concepts by adding influential factors such as language, culture and context, as well as how these themes interact. The last portion of each focus group was reserved for discussing and exploring the volunteers' experience of the NEO-PI-R. While the major themes were both guidelines and dominant prerequisites for both focus groups, it goes without saying that each group discussion, as well as the way in which this data was gathered, differed ever so slightly from one focus group to the next, and unfolded in a natural and intelligible discussion. The questions were therefore fielded to the group at the appropriate points during the focus group discussions.

4.7 Research Design

The research strategy of this study employed a dual focus in its research design, namely using both quantitative and qualitative methods. The advantage of using this dual focus is that it fulfils both the quantitative and the exploratory demands of evaluating the appropriateness of

[17] Please refer back to the Research Questions to view the focus group questions more specifically

the NEO-PI-R for a South African context. Therefore, by closely examining issues of appropriateness and comprehension, the researcher set out to expose more conclusive evidence of language bias in the NEO-PI-R.

4.7.1 Quantitative phase

The quantitative portion of the study employed a non-experimental cross-sectional design. Non-experimental methods are well suited to explorative research such as this study, where the requirements for causality are not applicable; namely there is no manipulation of the independent variable, there are no controlled measures and the volunteers are not randomised (Larsen & Buss, 2005). The non-experimental method was cross-sectional because it described group trends by analysing particular variables in relation to each other. This methodology was appropriate as it sought to investigate variables that could not be changed or manipulated, such as home language, and thereafter to explore relationships between variables, such as language and test scores (Bailey, 1997). In general, cross-sectional studies provide a "what is" dimension, rather than a "why" dimension for group trends and the ways in which variables relate to each other (Cox & West, cited in Bailey, 1997). What this is intended to reveal, is the nature of the relationships between variables; that is, volunteers' language group and test scores.

4.7.2 Qualitative phase

Bailey (1997) defines qualitative study as a descriptive method that emphasises lived experience of a particular phenomenon. The qualitative portion of this study explored aspects of lived experience in two procedures, namely open-ended questions as well as a focus group technique.

Open-ended responses in the Questionnaire

After completing the questionnaire, it was important to allow the volunteers the opportunity to reflect upon their experience whilst completing the NEO-PI-R. By using an open-ended response format, the researcher was able to gather concise, descriptive data regarding the subjective experience of the volunteers and their personal interactions with the NEO-PI-R. The aim herein was to identify specific words, items and concepts that were problematic, therefore

highlighting subjective difficulties related to language and understanding when completing the NEO-PI-R.

Focus Group Discussions

Conducting focus group discussions was an effective way to explore the volunteer's understanding of personality, its influencing factors and the experience of the NEO-PI-R as a whole. By using a focus group technique to gather rich, descriptive data, the study concerned itself with the comprehensive experience of the volunteers, their understandings as a multicultural sample, their personal perceptions on assessment in South Africa and their interactions with the NEO-PI-R. Therefore the aim was to explore the subjective difficulties related to language and understanding when completing the NEO-PI-R. Further, having employed a qualitative strategy such as focus groups, researcher was able to move towards a more descriptive approach, being more concerned with the individual's experience of language in the NEO-PI-R, and less concerned with statistical results. Babbie and Mouton (2004) posit that a qualitative methodology enables the researcher to study human experience, which in the case of this study, was the language within, and the appropriateness of the NEO-PI-R from the perspective of the social actors; the volunteers. The researcher subtly guided the focus group discussions in order to facilitate the exploration of relevant topics. This technique resembled an open discussion, according to Bailey (1997) and was relatively informal and explorative. Therefore, the researcher allowed uninhibited, descriptive discussion to unfold.

4.8 Procedure

4.8.1 Quantitative phase

With the permission of the lecturing staff, the students were approached, and volunteers were requested from the postgraduate class. This request was accompanied by an introduction to the topic in general, as well as the quantitative potion of the study in specific, followed by an ethical briefing. Succinctly, this introductory discussion included a description of what the researcher intended to do in the study, what the quantitative aspect entailed, how the data would be collected, and what a volunteer's participation involved. Thereafter, questionnaires were

distributed to the volunteers, and they were briefed regarding their participation[18]. The researcher was present to assist and answer any queries or uncertainties that arose. Each volunteer was instructed to detach and keep the Participant Information Sheet for their interest and information. Thereafter the volunteering students were requested to complete the questionnaire during their own time. The entire process should have taken the volunteer approximately 1 hour to complete. The students were allocated approximately ten days to complete this task, after which they were required to return the completed questionnaires to a well-labelled collection box, which was positioned in the psychology administrative office for this purpose. The researcher returned to the postgraduate class twice during the ten-day period to thank the students who had returned their questionnaires, and to remind the other students to complete and return the questionnaires. After the ten-day period had come to a closure, the researcher removed the box from the office; no further questionnaires were collected, and no other questionnaires were returned to the office. Once collected, each of the twenty-eight questionnaires were numbered in preparation for both for quantitative and qualitative data analysis. Analyses were conducted using SAS Enterprise Guide 4 (SAS Institute Inc. © 2006)

4.8.2 Qualitative phase

After the quantitative data collection phase, the researcher returned to the same volunteering students, and requested their voluntary participation for a series of focus groups. These focus groups were scheduled over the course of one week. Those who were willing to participate provided the researcher with their contact details as well as several times that suited them best during that week. The researcher co-ordinated a final schedule based on the preferred times that the volunteers had provided. Thereafter, the volunteers were contacted and provided with the schedule in which three days and varying time slots had been agreed upon for focus group meetings. The volunteers then self selected into a preferred day and time-slot to attend one focus group at his or her convenience. The researcher provided each volunteer with details regarding the on-campus venue, the meeting time, as well as a forecast of approximately how long the meeting would take. Prior to each meeting, volunteers were informed that the event

[18] Briefing the potential participants and/or volunteers for this study involved a verbal introduction to the topic, as well as a distribution of a Participant Information Sheet (see Appendix C), which detailed the aims, and procedure of the data collection process.

consisted of three stages; a brief orientation, the focus group discussion[19] and a closure. At each group meeting, the volunteers began with an orientation, which took place during the first 15 minutes before the focus group discussion. The orientation was important for several reasons; it was intended to ensure timely arrival of the volunteers, an ethical briefing, prompt commencement of the focus group and importantly, a rapport-building opportunity between volunteers and with the researcher. During this time, the volunteers were provided with hot and cold refreshments and were given a 'participation pack' that included a Participant Information Sheet[20] and Informed Consent Forms for participation[21], for video recording[22] and for confidentiality[23]. During this time the volunteers carefully read the pack, and signed consent where necessary. This procedure was identical for both scheduled focus groups. At this time, a signed and returned 'participation pack' was regarded as permission and consent from the volunteer to the researcher to advance with the scheduled focus group procedures.

Directly after the orientation, the actual focus group discussion commenced and was video recorded. The two groups were conducted two days apart. Following each of the focus group discussions the researcher drew the meeting to an official close. During the closure, the researcher thanked each volunteer for their time and effort, and invited informal, open discussion amongst the group. The researcher was present to assist and answer any queries or uncertainties that arose. All volunteers were welcome to enjoy the refreshments provided until such time as they left the venue.

[19] The discussion topics for the focus groups can be found in the qualitative Research Questions, or alternatively refer to Appendix I
[20] See Appendix E
[21] See Appendix F
[22] See Appendix G
[23] See Appendix H

4.9 Ethical Considerations

4.9.1 Quantitative phase

Ethical clearance was received from the Psychology Department at the University of the Witwatersrand (Protocol number: MPSYC/07/003 IH). Prior to the data collection phase of this study, the researcher approached the course co-ordinator and lecturer of the postgraduate group to request permission to conduct the study. After permission was granted, the department and lecturer were required to give signed permission to the researcher to address the students as a group after lectures. The students were addressed in their lecture venue by the researcher, in the presence of consenting staff members. They were fully briefed about the research before giving their informed consent to participate as a volunteer. At any stage during the introduction to the questionnaire, the volunteer/s had the right to abstain or withdraw at any time, or as they felt necessary. To this end, volunteers who chose to abstain or withdraw from the research were not disadvantaged or discriminated against in any way. Similarly, those who did participate were not rewarded or advantaged in any way. Participation was entirely voluntary.

After comprehending the aims of the research and volunteering, a completed and returned questionnaire was regarded as permission and consent from the volunteer to the researcher to utilise that data. Anonymity was guaranteed, and no individually identifying information was requested from any volunteer, at any point during the quantitative data collection. Thus, no individual scoring or feedback was provided about an individual's performance on the NEO-PI-R. This point of emphasis was made to the volunteers clearly. The volunteers were instructed to keep the information sheet that was attached to the questionnaire, on which the contact details of the researcher were clearly indicated. The researcher addressed all queries regarding the research, and encouraged volunteers to contact her if any queries or uncertainties arose.

4.9.2 Qualitative phase

All potential volunteers were fully briefed about the focus group procedure before giving their informed consent to participate. At any stage during the focus group procedure, the volunteer

had the right to withdraw. To this end, volunteers who chose to withdraw were not disadvantaged or discriminated against in any way. Similarly, those who did participate were not rewarded or advantaged in any way, and participation was entirely voluntary. The researcher obtained written informed consent from each of the volunteers on three separate accounts; firstly, for their voluntary participation; secondly, for all focus group discussions to be video-recorded; thirdly, for the group discussion to be a shared confidentiality among the participants, that is to say that the participants would not discuss the group responses outside of the focus group context. The volunteers were guaranteed anonymity during the data analysis as well as in the dissertation results and write-up. Therefore, all participants were informed that the researcher and her supervisor would be the only people to have access to the video records and transcriptions of the focus group discussions. Any responses that are discussed or quoted herein are coded to ensure participant confidentiality. The video records and transcriptions were destroyed upon completion of the research. In doing so, the researcher endeavoured to protect participants from harm or distress wherever possible during this research.

4.10 Data Analysis

4.10.1 Quantitative phase

The quantitative data was evaluated using descriptive statistics, reliability co-efficients and one-way ANOVA's. Since all the variables were normally distributed and the conditions of homogeneity of variance were fulfilled, parametric analyses were conducted.

Descriptive Statistics

Frequencies for the variables under study, namely gender, population grouping, home language and self-rated English proficiency, were computed. The summary statistics were obtained using the 'language collapsed' category (English or non-English) and the NEO-PI-R domain scale scores. Means, standard deviations, minimum and maximum values and skewness co-efficients were examined for the NEO-PI-R domains and facets.

Reliability Co-efficients

Internal consistency reliability is derived from the number of items in the test and the average inter-item correlations. Therefore, the reliability co-efficient can be interpreted as the proportion of variance in the observed test scores as accounted for by the variance in the true scores (Babbie & Mouton, 2004). Cronbach alpha co-efficients were examined for the NEO-PI-R in order to obtain a measure of internal consistency reliability of these scales. The Cronbach alpha co-efficients were reviewed at confidence level of ninety-five percent. As an exploratory exercise, the results were reviewed thereafter using a ninety percent confidence level to support previous findings.

One-way Analysis of Variance (ANOVA)

The Analysis of Variance (ANOVA) is a technique used to determine the possibility of group means equating population means. This is achieved by a comparison of population variances within and between groups (Bailey, 1997). ANOVA's were used to find the differences between home language and the domains and facets of the NEO-PI-R. The dependent variables, namely the domains and facets of the NEO-PI-R were found to be normally distributed. In addition homogeneity of variance was established using Levene's test for equality of variance, and this parametric assumption was found to be present. Therefore parametric one-way ANOVA's were used. In one appropriate instance (the facet of Competence), a skewness value exceeded -1, and a non-parametric analysis of variance was carried out using the Kruskal-Wallis technique for that non-parametric variable. In this case, the Chi-Squared value was reviewed for significant differences using a confidence level of ninety-five percent.

4.10.2 Qualitative phase

The qualitative data was derived from two separate sources – primarily, the video recordings of the focus groups and thereafter the open-ended questions from the questionnaire as a supportive contribution. Both sources of qualitative data were evaluated using content analysis. Babbie and Mouton (2004) posit that thematic content analysis is the most successful analytic tool with which to approach communicated data, such as focus group discussions or open-ended responses. In this study, the qualitative data was organised into units of observation and

analysis. The focus group discussions acted as the units of observation, while the themes that emerged from the text were regarded as the units of analysis.

Open-ended responses to the Questionnaire

This analysis phase of the qualitative data was carried out using the open-ended questions from the questionnaire. These questions were intended to address the issues of appropriateness and understanding of the NEO-PI-R from a subjective perspective; that is, from the individual volunteer's point of view. The volunteers' responses to these items were analysed using thematic content analysis, in which the manifest content was evaluated. Wilson (cited in Breakwell, Hammond & Fife-Schaw, 2002) describes themes as patterns of ideas and premises that are present in the data, describing and organising the content of that data, and inevitably enabling deep interpretation of the data. The themes that emerged from the thematic analysis contributed descriptive support for the qualitative results alongside the rich, descriptive analysis of the focus groups discussions.

Focus Group Discussions

The video-recorded focus group discussions were transcribed verbatim, and included the researcher's field notes where necessary. Thereafter, an explorative review of the data was carried out and the emergent themes were evaluated using thematic content analysis. The thematic analysis involves several steps in which, to summarise briefly, the data is coded, clustered and consolidated.

Coding involves the conceptualisation of the data – which in this case was the transcribed group discussions – whereby it is fine-combed for meaning and repetition of themes (Babbie & Mouton, 2004). During this process the data can be categorised into two different forms, either manifest content (the visible surface content) or latent content (the underlying meanings). Analysis of manifest content basically denotes how often particular words (or synonyms thereof) emerge and re-emerge, whereas analysis of latent content searches for deeper commonalities, such as related concepts, ideas and premises (Babbie & Mouton, 2004). The researcher may choose to analyse either one of the two forms of data, or alternatively combine them and analyse both simultaneously.

This study opted to incorporate a combined approach as proposed by Babbie and Mouton (2004), whereby superficial and deep meaning was analysed together. By gathering words, concepts and ideas on the basis of likeness and similarity, the researcher was able to create groups of 'like' terms; this was essentially the creation of themes. Therefore the coding strategy utilized in this study involved counting how often popular words, ideas and premises were replicated within the data, and then grouping them by similarity, and finally creating conceptual categories for these clusters of words. Each cluster, or theme, was consolidated in a final step, whereby clusters sharing many characteristics were merged and combined. Thus, the result was a final set of prominent themes for the qualitative data. This analytic strategy can be thought of as a means to retain a sense of wholeness of the essences of the transcriptions, while also developing a firm sense of how often particular themes emerged.

5

Results and Discussion

5.1 Introduction

In this chapter the results of a complex analysis come together; owing to the fact that this study employs both a quantitative and a qualitative technique, the methodology of each analytic technique up to this point has been documented separately. The results are presented in the same manner; the quantitative results followed by the qualitative results. All quantitative results appear in a written and a tabulated format, for ease of comprehension. Where possible, the qualitative results will follow suit. Following this the results of each analytic technique are discussed.

5.2 Quantitative phase results

5.2.1 Descriptive Statistics

The descriptive statistics of the domain and facet scales in the NEO-PI-R are presented in Table 5.1. The scales were analysed for skewness in order to assess the appropriateness of using parametric tests. To indicate that the scales are normally distributed, the skewness co-efficients must be between –1 and 1 (Babbie & Mouton, 2004). While almost all of the domain scales indicated normality in this way, one out of the 35 scales had a skewness co-efficient that exceeded –1, namely Competence. This scale was analysed using non-parametric statistics. The remaining 34 domain scales were normally distributed, and had skewness coefficients ranging from –0.938 to 0.557, therefore indicating that the use of parametric statistics was appropriate.

Scale Name	Mean	Standard deviation	Min	Max	Skewness
Neuroticism	101.92	20.81	66.00	140.00	0.23
Anxiety	20.00	5.60	10.00	31.00	-0.07
Angry hostility	16.22	4.27	8.00	26.00	0.25
Depression	18.04	5.25	9.00	27.00	0.18
Self consciousness	18.52	4.18	13.00	28.00	0.42
Impulsivity	18.34	5.20	10.00	27.00	0.03
Vulnerability	10.81	4.19	5.00	20.00	0.56
Extraversion	134.09	17.90	93.00	185.00	0.35
Warmth	27.81	4.12	17.00	36.00	-0.94
Gregariousness	19.93	4.57	9.00	28.00	-0.63
Assertiveness	18.30	4.68	7.00	29.00	-0.22
Activity	20.40	4.28	11.00	29.00	-0.40
Excitement seeking	23.94	3.94	16.00	32.00	0.19
Positive emotions	23.73	3.68	17.00	32.00	-0.10
Openness	124.11	16.85	98.00	164.43	0.25
Fantasy	19.48	4.69	10.00	29.00	-0.08
Aesthetics	22.62	4.79	12.00	31.00	-0.44
Feelings	26.25	3.66	18.00	34.00	-0.11
Actions	14.15	2.78	9.00	21.00	0.41
Ideas	21.75	5.35	10.00	33.00	0.00
Values	19.82	3.34	14.00	25.14	-0.27
Agreeableness	125.92	12.16	97.02	148.09	-0.30
Trust	21.56	4.19	12.00	29.00	-0.30
Straightforwardness	19.29	3.38	12.00	27.43	0.09
Altruism	25.48	3.31	17.00	33.00	-0.42
Compliance	14.07	4.38	6.00	25.00	0.36
Modesty	19.70	5.17	6.00	29.71	-0.47
Tender mindedness	25.44	3.81	16.00	32.00	-0.35
Conscientiousness	128.00	18.71	84.00	156.00	-0.56
Competence	23.69	3.15	15.00	28.00	**-1.21**
Order	15.88	6.28	2.29	27.43	-0.26
Dutifulness	25.74	4.34	19.00	34.29	0.30
Achievement striving	22.60	4.68	9.00	30.86	-0.93
Self discipline	20.26	4.27	10.00	29.00	-0.57
Deliberation	19.83	4.18	11.00	27.00	-0.16

Table 5.1. – Descriptive Statistics for the NEO-PI-R domain and facet scales; N = 28

5.2.2 Reliability Analysis

The domain scales were analysed for internal consistency and performed well, yielding generally good reliability with Cronbach alpha (α) values ranging between 0.62 and 0.91, with a mean alpha of 0.84, as evidenced in Table 5.2[24]. Of the five domains, Neuroticism (N), Extraversion (E), Conscientiousness (C) and Openness (O) yielded robust alphas, at 0.91, 0.90, 0.91 and 0.87 respectively. While these four domain scales indicate strong internal consistency, Agreeableness (A) yielded the weakest reliability of the group with an alpha value of 0.62. Therefore it is suggested that the presence and strength of the five domains scales may be deemed a reliable measure overall, although Agreeableness was the least effective vehicle of reliability out of the five domains in a South African student sample[25].

The facets of each domain were also analysed for reliability and internal consistency, and yielded an array of Cronbach alphas between 0.18 and 0.91, with a mean alpha value of 0.71, as evidenced in Table 5.2. Approximately 77% of the facets produced moderately high to strong reliabilities with alpha values ranging between 0.70 and 0.87. This finding further supports the notion that the NEO-PI-R appears to be yielding a generally sound level of reliability.

During the reliability analysis of the facet scales, the facet of Anxiety (N) emerged with the strongest reliability, yielding an alpha value of 0.87; slightly stronger than Ideas (O) and Modesty (A), both yielding an alpha value of 0.82. Depression (N), Feelings (O) and Trust (A) followed with alpha values of 0.80. Warmth (E), Aesthetics (O) and Order (C) also emerged with moderate alpha values of 0.79, and Assertiveness (E) and Fantasy (O) with alpha values of 0.77 and 0.78 respectively. Four other facets measured considerably lower than the majority of the scales, but were still in the acceptable range. An alpha of 0.60 was obtained for Self-consciousness (N), 0.59 for Values (O), 0.66 for Tender- mindedness (A) and 0.57 for Competence (C). There were however, three facets that did not perform well, yielding poor internal consistency with significantly low alphas, namely 0.18 for Actions (O), 0.46 for Straightforwardness (A) and 0.51 for Excitement seeking (E).

[24] See Table 5.2 for Reliability Analysis of domain scales and facets
[25] Refer to Sampling in the Chapter 4 to review the role of a student population

Scale Name	α	Mean α
Neuroticism	*0.91*	
Anxiety	0.87	0.75
Angry hostility	0.70	
Depression	0.80	
Self consciousness	0.60	
Impulsivity	0.76	
Vulnerability	0.74	
Extraversion	*0.90*	
Warmth	0.79	0.71
Gregariousness	0.74	
Assertiveness	0.78	
Activity	0.71	
Excitement seeking	**0.51**	
Positive emotions	0.71	
Openness	*0.87*	
Fantasy	0.78	0.66
Aesthetics	0.78	
Feelings	0.81	
Actions	**0.18**	
Ideas	0.81	
Values	0.59	
Agreeableness	*0.62*	
Trust	0.80	0.70
Straightforwardness	**0.46**	
Altruism	0.75	
Compliance	0.70	
Modesty	0.83	
Tender mindedness	0.67	
Conscientiousness	*0.91*	
Competence	**0.57**	0.72
Order	0.79	
Dutifulness	0.74	
Achievement striving	0.75	
Self discipline	0.74	
Deliberation	0.75	

Table 5.2. – Reliability Analysis for domain and facets scales of the NEO-PI-R

The results from the reliability analysis were then further scrutinised in order to identify the most statistically problematic facets from each domain. It was then possible to identify which facets and which domains proved to be problematic for the South African student sample in this study. According to the results obtained in Table 5.2, Neuroticism was the most reliable domain ($\alpha = 0.91$) with the most reliable facets producing a mean alpha of 0.75. Although Conscientiousness was an equally reliable domain ($\alpha = 0.91$), when compared to N its facets yielded slightly weaker alphas, and had a mean alpha value of 0.72. It is suggested that the facet of Competence may be responsible for the lower mean alpha. Competence was also the only facet to display skewness outside of the accepted 1 and -1 range, indicating that the participants did not identify well with items evaluating this facet. This indicates a lower internal consistency at the level of a facet, although C maintains its robust quality as a domain.

Openness as a domain yielded a robust alpha ($\alpha = 0.87$), however at a facet level, the mean alpha value of 0.66 was the lowest of all. This indicates mediocre reliability at a facet level. The problematic issue is that some of the O facets were strong, but the low reliability of Actions and Values decreased the mean facet reliability. This in turn makes the Openness facets the weakest performance of the reliability analysis, making O domain appear to be slightly weaker.

These findings are consistent with other cross-cultural studies using the NEO-PI-R, whereby the alpha coefficients for the O domain and facet scales were consistently lower than the norms for their American counterparts. In a study by Piedmont et al. (2002) internal consistency was also slightly lower than the American normative sample of the manual, when using a bilingual Zimbabwean sample, whereby the low alpha coefficients for Excitement seeking (E), Actions (O) and Values (O) were concerning. In addition, clear O factors were found neither by Heuchert et al. (2000) nor Heaven et al. (1994) in predominantly second language English speakers. In fact, in the present study, the O facets had the poorest performance in the reliability analysis, indicating some congruency with these results. Piedmont et al. (2002) also noted that only five of the thirty facet scales had an alpha value above 0.60, which is considerably lower than the American normative values of the NEO-PI-R. In the present study, which uses a sample of postgraduate students, 70% of the 30 facets had alpha values of more than 0.7 and only 19% of the facets had alpha values of more than 0.8. Therefore, in the present

study's reliability analysis the internal consistency of the facets is not as low as Piedmont's et al. (2002) results, and are closer to the standards of the NEO-PI-R manual[26] (Costa & McCrae, 1992). Horn (2000) also encountered problems with internal consistency, with alphas ranging between 0.57 and 0.83, which is perhaps closer to the results of the present study. Horn (2000) found that the O domain, and especially the Values facet, was particularly difficult to measure in a sample of 75 bilingual Xhosa undergraduates. The present study's results are consistent with these findings; Values was noted as having a low alpha value of 0.59, alongside Actions with an alpha value of 0.18, both of which are facets in the O domain. This domain also yielded the lowest mean alpha value in the present study. Although Horn also found internal consistency very close to the NEO-PI-R's manual standards, the study did not achieve a five-factor structure. Replicating a five-factor structure has been problematic in the past, with some studies achieving three and at most four factors (Piedmont et al., 2002; Taylor, 2000).

In the present study, Agreeableness exhibited the weakest reliability as a domain ($\alpha = 0.62$), and also had the widest range of alpha values; the six facets ranged from 0.45 to 0.83, with Straightforwardness and Modesty respectively at the bottom and top of this range. The problematic issue arises in that the low facet reliabilities of Straightforwardness ($\alpha = 0.46$) and Tendermindedness ($\alpha = 0.67$) probably decrease the mean alpha co-efficient of Agreeableness. It is worth noting that in a study by Heaven et al. (1994), whereby university students were given a list of adjectives relating to the FFM, it was found that adjectives relating to the A and C domains were problematic. This is an important congruent study because the present study also found that A was the weakest domain, while O had the weakest facets. Arguably these two represented the most problematic aspects of the reliability analysis with poorest performance. Succinctly, one should begin questioning the reliability of the Openness and Agreeableness domains for a multicultural South African user group.

In light of the literature, the present study indicates that there may be numerous influences acting upon the test scores, making them recurrently lower than the American normative counterparts. The results of the reliability analysis indicate that there are problems with the consistency of the test items. One possible suggestion is that there may be specific problems

[26] See Instruments in Chapter 4 for a detailed summary of the NEO-PI-R's manual standards

relating to the use of language, specifically Americanised English, with which the problematic facets are currently assessed in the NEO-PI-R. Either the language is neither appropriate nor applicable for a South African sample of university students, or these specific traits are poorly represented in South African culture. These problems are likely to be operating simultaneously in the present study, if one takes stock of the results thus far. These issues can be addressed using a study by Heaven et al. (1994), in which a South African sample did not replicate the five-factor. The results were problematic on three levels, namely home language, response-sets and basic personality structures. Heaven et al. (1994) found that the use of advanced English vocabulary and sentence structures, constructed in a foreign context, were the likely source of hesitation or confusion for English-speakers, and more significantly in second-language English speakers. Secondly, the study pointed out that response styles with which South Africans attempt test items, and perhaps testing in general, differ from Western counterparts. Thirdly it was proposed, although not established, that the FFM did not adequately represent personality structures in South African socio-cultural milieu.

Yielding similar findings to the present study, research by Heuchert et al. (2000) used a mixed racial group of 408 South African university students who were given the NEO-PI-R in English. The results showed that the five-factor structure of personality was obtained; however, the five-factor replication was clearer among the individuals for whom English was a home language. Regardless of race, those for whom English was not a home language (first language) reported significant difficulty in understanding the abstract concepts contained in the NEO-PI-R. The problematic domain was O. The present study found that the facets of O were the most problematic of all other facets, and that Actions had the lowest alpha value. It is worth noting that Heaven et al. (1994), Horn (2000) and Piedmont et al. (2002) experienced problems with the O domain and facets. Heuchert et al. (2000) suggest that this common problem may point to two possibilities; either the Westernised English was too unfamiliar for South Africans, therefore creating barriers in comprehension and appropriateness, or the actual domains of the FFM were not entirely suitable for indigenous South African personalities. This may be indicating the relative inappropriateness of the FFM in South African culture. These studies show that the problems associated with the cross-cultural use of the NEO-PI-R reveal the differing linguistic nuances in English across contexts, as well as the respective cultural and

environmental heritages across contexts. Using the reasoning developed by Satz-Miracle (1981), it may therefore be plausible that the use of language in the NEO-PI-R his may be largely responsible for the problems experienced by participants. There is congruence amongst these studies suggesting that there are differences in the understanding of the English used in the NEO-PI-R. The main difference is between those for whom the test had been intended (American English-speakers), and those for whom the test was eventually used (other English-speakers). Succinctly, the English that would be fully understood and appropriate for Americans may be misinterpreted and inappropriate for South Africans.

To probe these suggestions further, a qualitative analysis is pertinent. It is suggested that by using the American normative standards of the NEO-PI-R (upon any audience that is in fact not an American normative sample), one cannot respond to nor account for these types of problems, be they socio-cultural specificities and nuances, or language interferences in the way that each participant will understand, interpret and respond to the NEO-PI-R. This questions the overall appropriateness and applicability of using an instrument such as the NEO-PI-R in South African cultural and lingual settings, when in fact it has been developed in the American culture and located within the American English lexicon. Thus One-way ANOVA's were conducted at a domain and facet level to determine whether home language was impacting upon the participants' understanding of the items and constructs of the NEO-PI-R.

5.2.3 One-Way Analysis of Variance (ANOVA) at a scale level

In the analyses of variance of the domain and facet scales of the NEO-PI-R, there were no significant differences between home language and the domain and facet scales of the NEO-PI-R as evidenced in Table 5.3. Thus, the domains and facets were found to be statistically appropriate or accessible to a multicultural sample of South African university students.

5.2.4 One-Way Analysis of Variance (ANOVA) at an item level

In the analyses of variance of the item scores of the NEO-PI-R with home language it was found that many items showed a statistically significant difference with home language

Scale Name	F values	P values	Df
Neuroticism	1.24	0.276	1,26
Anxiety	2.09	0.161	1,26
Angry hostility	0.46	0.506	1,26
Depression	1.12	0.300	1,26
Self consciousness	2.77	0.109	1,26
Impulsivity	0.10	0.760	1,26
Vulnerability	3.48	0.074	1,26
Extraversion	0.38	0.543	1,26
Warmth	0.90	0.351	1,26
Gregariousness	0.08	0.782	1,26
Assertiveness	2.50	0.127	1,26
Activity	0.12	0.734	1,26
Excitement seeking	0.34	0.564	1,26
Positive emotions	0.33	0.568	1,26
Openness	0.02	0.889	1,26
Fantasy	0.32	0.578	1,26
Aesthetics	0.04	0.848	1,26
Feelings	1.35	0.257	1,26
Actions	2.92	0.100	1,26
Ideas	0.00	0.983	1,26
Values	0.47	0.498	1,25
Agreeableness	0.04	0.843	1,26
Trust	0.37	0.548	1,26
Straightforwardness	0.14	0.714	1,26
Altruism	0.00	0.953	1,26
Compliance	0.03	0.858	1,26
Modesty	2.02	0.168	1,25
Tender mindedness	0.57	0.459	1,21
Conscientiousness	0.86	0.362	1,26
Competence[27]	1.43	0.243	1,26
Order	0.09	0.767	1,26
Dutifulness	0.36	0.556	1,26
Achievement striving	1.10	0.304	1,25
Self discipline	1.02	0.322	1,26
Deliberation	0.00	0.988	1,26

Table 5.3. – ANOVA's by domain scale level *significant at $p<0.05$

[27] The results provided for the facet of Competence are derived from a Kruskal-Wallis analysis after obtaining a skewness co-efficient of –1.209

impacting upon the test scores. Homogeneity of variance was explored using Levene's test for homogeneity of variance. This condition was met for all item comparisons. Only items which demonstrated significant differences across language are presented in Table 5.4[28].

Of the 240 test items on the NEO-PI-R, 12 items were problematic using a 5% level of significance, and a further 21 items were problematic using a 10% level of significance. These items are represented in Table 5.4. To summarise, a total of 33 of the 240 test items (14% of the total questionnaire) show evidence of home-language impacting upon NEO-PI-R scores in that setting. The 33 problematic items were subdivided for further evaluation. The results in Table 5.4 show that the most problematic facets at a 5% level of significance were Anxiety (N), Impulsiveness (N), Gregariousness (E), Activity (E), Positive Emotions (E), Aesthetics (O), Actions (O), Straightforwardness (A), Altruism (A) and Deliberation (C). Of these 10 facets all had one significant item, with the exception of Impulsiveness (item 21 and 171), and Deliberation (item 30 and 240), each with two significant items. Importantly, the facets of Actions and Straightforwardness showed poor internal consistency in the reliability analysis with alpha values of 0.18 and 0.46 respectively.

The facets that were problematic at a 10% level of significance were Anxiety (N), Depression (N), Self-consciousness (N), Vulnerability (N), Activity (E), Warmth (E), Excitement-seeking (E), Aesthetics (O), Feelings (O), Straightforwardness (A), Competence (C) and Self-discipline (C). Of these 12 facets Depression had two problematic items (item 131 and 161), Self Consciousness had two problematic items (item 16 and 106), Activity had two problematic items (item 77 and 167), Aesthetics had two problematic items (item 68 and 128), Feelings had two problematic items (item 166 and 223) and Competence had three problematic items (item 95, 125, 155). The apparent problematic nature of Competence corresponds well with the results from the reliability analysis, in which the facet's alpha value was the lowest in the C domain. Furthermore, Anxiety, Activity, Aesthetics, Straightforwardness were problematic at both a 5%

[28] The abridged version of Table 5.4 is represented overleaf; the complete results of Table 5.4 can be found in Appendix J. Importantly, the full wording of items will not be presented in Table 5.4. This is in accordance with the copyright agreements of the NEO-PI-R as well as the instrument manual.

Item Domain	Item facet	Item No.	F values	P values	Df
N	Self-consciousness	16	3.14	0.09	1.27
N	Impulsiveness	21	4.37	**0.04***	1.26
N	Anxiety	61	3.77	0.05	1.27
N	Vulnerability	86	3.04	0.07	1.27
N	Self-consciousness	106	3.33	0.07	1.26
N	Anxiety	121	4.32	0.05	1.26
N	Depression	131	3.48	0.07	1.27
N	Depression	161	3.33	0.08	1.27
N	Impulsiveness	171	6.64	**0.02***	1.27
N	Anxiety	211	10.96	**0.00***	1.27
E	Activity	77	3.6	0.06	1.27
E	Excitement-seeking	112	3.13	0.07	1.26
E	Activity	167	3.94	0.05	1.27
E	Activity	197	7.82	**0.01***	1.27
E	Warmth	212	3.71	0.05	1.27
E	Gregariousness	217	4.24	**0.04***	1.27
E	Positive emotions	237	5.17	**0.03***	1.27
O	Aesthetics	8	6.39	**0.02***	1.27
O	Aesthetics	68	3.3	0.05	1.27
O	Actions	108	4.8	**0.04***	1.26
O	Aesthetics	128	4.27	0.05	1.26
O	Feelings	166	3.26	0.08	1.27
O	Feelings	223	3.62	0.05	1.27
A	Trust	4	3	0.05	1.27
A	Straightforwardness	9	6.39	**0.02***	1.27
A	Altruism	44	4.44	**0.04***	1.27
A	Straightforwardness	189	3.84	0.05	1.27
C	Deliberation	30	4.71	**0.04***	1.27
C	Competence	95	4.04	0.06	1.26
C	Self-discipline	115	3.38	0.07	1.26
C	Competence	125	3.98	0.05	1.27
C	Competence	155	3.24	0.07	1.27
C	Deliberation	240	7.62	**0.01***	1.27

Table 5.4. –Problematic items, significant at $p<0.1$ ***** significant at $p<0.05$

and 10% level of significance. Overall, this indicates that items evaluating N, O and C were poorly represented. From a review of Table 5.4 it is evident that N emerges as the most problematic domain at an item level, followed by E, and then O and C. Furthermore, it is evident that facets within the N, E and C domains emerged as the most problematic aspects from the analysis of variance at an item level. Agreeableness appears to be unproblematic at an

item level; this may indicate that A could be the most applicable domain with the fewest problematic facets for South African personalities.

Similar results were reported in a study by Piedmont et al. (2002) in which the facet scales, specifically E (particularly Excitement-seeking) and O (particularly Values), were more problematic. In accordance with Piedmont et al. (2002) the quantitative results appear to suggest, a) that some trait constructs may be weakly represented for a South African user group, or b) that specific items are poor trait indicators in our culture, or c) that there are significant problems with the language in the NEO-PI-R, or that any one, two or three of these suggestions may be plausible (Piedmont et al., 2002).

Perhaps the most intriguing part of the quantitative analysis is the comparison between, what the researcher will call, *macro* and *micro* quantitative analysis of the NEO-PI-R. When analysed on a *macro* scale that is looking at the statistical behaviour and appropriateness of the domain scales, the NEO-PI-R appears to perform well in the South African socio-cultural setting. However, when analysed on a *micro* scale that is looking at the statistical behaviour and appropriateness of the facets and particular items, the NEO-PI-R does not perform well in the South African setting and generally produces several problematic aspects for test-takers. This begs the question as to what type of discrepancy is being detected, and what it is saying about the way that the NEO-PI-R - or the Five Factor model for that matter – is being evaluated for use within the South African milieu. It is relatively clear that the domains are measuring as reliable, valid and appropriate, but that the facets and items are not. McCrae and Terraccianno (2005) suggest that the basic features of the NEO-PI-R, seem to generalise well across cultures, even though there are interesting variations from one culture to another. However, the discussions by these authors about the cross-cultural applicability and replicability of the FFM are more reflexive. In similar vain, Cheung et al. (2008) found evidence that in a non-Western community such as the Chinese, it is possible for an entire domain, namely Openness, to be culturally inappropriate and a poor measure of that specific culture's collective personality structure. In the South African context, it has been argued that O and A are difficult to replicate, and that many studies obtain only three and sometimes four of the five-factor structure (Heaven et al., 1994; Horn, 2000; Piedmont et al., 2002). However, it is not sufficient to stop at

such statements, and instead it is necessary to extend a good deal of research beyond these interesting variations; what are they and why do they occur? In Rolland's (2002) review of research on the NEO-PI-R and the generalizability of the FFM across 16 various Western and East European cultures, the results showed that the cross-cultural generalizability of N, O and C is relatively good, while E and A are much more sensitive to cultural and lingual influences. Interestingly, the literature on Collectivist cultures such as African and Asian cultures, indicates that O and C are in fact problematic while the domain of A is arguably the least problematic (Cheung et al., 2008; Heuchert et al., 2000; Horn, 2000; Piedmont et al., 2002; Vogt, 2009). The present study's results are congruent to these findings and indicate that using a Westernised instrument to assess a South African personality may not be entirely suitable, the sensitivities and cultural specificities of which would be under addressed therein. The hypotheses that are most frequently accepted to account for this sensitivity is firstly, in many non-Western communities the adjectives used within assessment instruments such as the NEO-PI-R, do not embrace the domains sufficiently to allow replication, and secondly that some of the constructs measured in the instrument, especially at the facet level, may simply have no counterpart in certain non-Western communities (Cheung et al., 2008; Heuchert et al., 2000; Horn, 2000; McCrae & Terraccianno, 2005; Piedmont et al., 2002). Therefore there is a significant interference with the test scores, indicating evidence of both language bias and issues of inappropriateness when using such instruments. Indeed the supportive literature that suggests that domains are replicable across culture, but that the facets are not as easily replicable across cultures. This indicates that the influence of culture and language is acting upon the facet level.

5.3 Qualitative phase results

5.3.1 Qualitatively problematic items

The open-ended portion of the questionnaire required that the subjects worked carefully through the NEO-PI-R and clearly marked or recorded the items, words or concepts that they did not understand, as well as those that they had perceived to be inappropriate for a multicultural South African user group. For each selection, the subjects were required to provide a brief motivation for their choice, the results of which have been tabulated in Table 5.5. By reviewing Table 5.5 it is suggested that the sample of the present study identified a fair number of items from the

NEO-PI-R as being difficult, confusing, inappropriate or plainly incomprehensible. Approximately 16.5% of the NEO-PI-R's items were found to be problematic in this way.

Items, words or concepts that were commonly identified because they were difficult to understand, include items 5, 9, 16, 20, 59, 117, 119, 143, 147, 160, 219, 238 and 239. These items primarily represent the domain of Agreeableness, and to a lesser extent Openness and Conscientiousness. Neuroticism was not a common selection; only two items from the N domain were cited as being difficult to understand. According to the response frequencies obtained, the items that the participants found particularly difficult to understand are listed to according to the frequency of citation, that is the number of people who identified the item as being difficult to understand: item 238 (O) was identified by 24 people (86% of the sample), item 119 (A) by 21 people (75% of the sample), item 20 (C) by 20 people (71% of the sample), item 160 (C) by 17 people (61% of the sample), item 143 (O) by 16 people (57% of the sample), item 219 (A) by 16 people (57% of the sample), item 239 (A) by 16 people (57% of the sample) and item 5 (C) by 15 people (53% of the sample). The actual phrases or words that were problematic and difficult to understand in these items are presented in Table 5.5.

The items, words or concepts that were commonly identified because they were found to be inappropriate in the South African context include, item 27, 52, 59, 105, 112, 117, 143, 147, 149, 157, 172 and 198. These items strongly represent the domain of Extraversion, and to a lesser degree Openness, Agreeableness and Conscientiousness. According to the response frequencies obtained, the items that the participants found particularly inappropriate for the South African context are listed to according to the frequency of citation, that is the number of people who identified the item as being inappropriate: item 52 (E) was identified by 26 people (93% of the sample), item 172 (E) by 23 people (82% of the sample), item 157 (E) by 19 people (68% of the sample), item 198 (O) by 16 people (57% of the sample), item 143 (O) by 13 people (46% of the sample) and item 105 (C) by 12 people (43% of the sample). The actual phrases or words of these items that were identified as being inappropriate for the South African context are presented in Table 5.5[29].

[29] Importantly, the full wording of items will not be presented in Table 5.5. This is in accordance with the copyright agreements of the NEO-PI-R as well as the instrument manual.

Item domain	Facet scale	Item No.	Problematic words or item phrases	Response frequency		Participants' Reasoning
N	Self-consciousness	**16****	social blunder	13	3	Did not understand. Confusing. Uncommon word
N	Anxiety	**121***	apprehensive about the future	4	2	Unclear meaning. Confusing. Did not understand
E	Positive attention	27	literally jumped for joy	6	10	Couldn't understand in a sensible manner. Too extraverted
E	Activity	47	I do them vigorously	0	5	Confusing. Unclear meaning
E	Excitement seeking	52	vacationing, Las Vegas	2	26	Not contextual
E	Excitement seeking	**112****	movies, shocking or scary	4	11	Culturally irrelevant
E	Positive attention	117	bubble with happiness	10	8	Did not understand. Confusing. Uncommon word
E	Positive attention	147	"light-hearted"	6	11	Unclear meaning. Confusing
E	Gregariousness	157	vacation, cabin in the woods	0	19	Culturally irrelevant
E	Excitement seeking	172	roller-coasters	0	23	Culturally irrelevant
O	Ideas	143	"mind-twister"-type puzzles	16	13	Did not make sense. Unclear
O	Actions	198	vacation, tried and true spot	8	16	Couldn't understand in a sensible matter. Difficult to understand
O	Values	238	"new morality", permissiveness, morality	24	6	Did not understand
A	Compliance	49	Sarcastic, cutting	5	1	Did not understand. Confusing. Uncommon word
A	Tender-mindedness	59	hard-headed, tough-minded	12	11	Unclear. Uncommon term
A	Modesty	84	better than most people	2	4	Couldn't understand in a sensible matter. Confusing. Unclear
A	Tendermindedness	119	panhandlers	21	4	Uncommon word. Culturally-specific & irrelevant
A	Tendermindedness	149	human need, economic considerations	0	10	Culturally irrelevant
A	Modesty	174	I am no better than others, their condition	6	4	Couldn't understand in a sensible manner
A	Straightforwardness	219	shrewdness in handling people	16	4	Did not understand
A	Tendermindedness	239	"merciful" than as "just"	16	5	Did not understand
A	Straightforwardness	**9***	crafty or shy	14	7	Words mean different things. Not synonymous terms
C	Competence	5	prudence	15	3	Did not understand
C	Achievement striving	20	lackadaisical	20	4	Did not understand
C	Dutifulness	105	solitaire	7	12	Culturally irrelevant, uncommon word
C	Order	160	fastidious, exacting	17	1	Did not understand

Table 5.5. – Problematic items from a qualitative perspective

***** These items were found to be significant at 5% in the quantitative analysis

****** These items were found to be significant at 10% in the quantitative analysis

Indicates how many items were underlined – participant did not understand word, phrase or concept

Indicates how many items were crossed out – participant found word, phrase or concept to be inappropriate

The possible reasons as to why these items were problematic for the South African user group of the present study seem to be both a language problem (words, phrases and concepts that were not understood) as well as an appropriateness problem (words, phrases and concepts that were identified as inappropriate for the South African context). The accumulative response frequencies for each category are 128 and 126 respectively. This indicates that the participants identified difficult words and phrases roughly as often as they identified contextually incongruent words and phrases. What is evident from the results in Table 5.5 is that in many cases the participants were identifying multiple problems and/or inconsistencies within each item. Very seldom was an item found to be either inappropriate or incomprehensible, and in most instances (80% of the instances) it was a combination of both. Descriptively, the items identified for containing problematic language appear to deal with advanced English words and Americanised sayings and figures of speech, whereas the items identified for being inappropriate appear to deal with features of Americanised life and places.

Some issues that are very intriguing at this point of the qualitative analysis involve domains E, A and N. Firstly, Extraversion has been identified as highly problematic, especially from an appropriateness perspective. Participants did not find the items evaluating E (particularly Positive attention and Excitement-seeking) to be appropriate in the South African context. Secondly, Agreeableness items (particularly Tendermindedness and Straightforwardness) were found to be problematic from a language perspective, indicating that the words, concepts and ideas in these items were generally the most difficult to understand. Lastly Neuroticism was not commonly identified as either inappropriate or incomprehensible, and yet during the quantitative analysis Neuroticism items were most frequently identified as problematic. These three intriguing points are important to note now, and will be integrated into the evaluation of theme two of the thematic content analysis of the focus group discussions.

5.3.2 Thematic content analysis of the open-ended questions

The thematic analysis of the open-ended section of the questionnaire evaluated the participant's responses with regards to the appropriateness and understanding of items, words and concepts within the NEO-PI-R. The participants described why certain items, words or concepts were

perceived to be inappropriate in a South African context, and why their understanding of those items, words or concepts was obscured. The results of each open-ended question will be discussed separately to follow. Direct quotes from the questionnaires will be used, and coded to protect the identity of the participants, thereby maintaining anonymity. Participants will be abbreviated with a P as well as the corresponding questionnaire number.

Open-ended Question 1

Were there words, concepts or items that you did not understand?
Lack of exposure to figurative & literal English in general, and Americanisms in specific
Unfamiliar language usage
Unfamiliar colloquialisms
Unfamiliar phraseology & grammatical structure
Perceived as inappropriately constructed for an South African audience

Table 5.6. – Emerging themes from open-ended question 1 of the questionnaire

The five themes that emerged during the thematic analysis, as represented above, indicate that the participants had difficulty understanding certain words and concepts as well as entire items in the NEO-PI-R. The most prevalent theme to emerge described that the actual sentence structure of some phrases and items in the NEO-PI-R was unfamiliar and difficult to make sense of (coincidently, this theme emerged strongly in the focus group discussions, which will follow shortly). In these instances, participants reported that the order in which words appeared in a sentence was not only confusing but also difficult to read fluidly; "…*making sense of the words' full meanings in the sentence was a bit problematic at times"* (P9) and *"sometimes the way the questions were asked was a little bit strange, and I felt confused from time to time"* (P4). Most often it was not necessarily the words themselves that were misunderstood (or not understood at all), but rather the overall meaning of the sentence or phrase from a structural or grammatical point of view; "*It was difficult to determine the meaning of words in the context of the short statements. A lot of the time the statement itself was completely foreign to me"* (P18). Subsequently, many participants were not wholly sure as to what the item asked, and reported to have felt confused because of an unfamiliar sentence structure.

Two other strong themes to emerge involved actual words, colloquialisms and figurative language; participants reported that some words and some figures of speech were foreign, misunderstood and ill fitting in a South African context. In these instances the participants did not understand the focus of the item and were unable to answer accurately; *"I think I've maybe heard them before, but I've never used them and I'm not sure of their exact meaning"* (P10) and *"They are not words I have heard on a daily basis. They are not part of my vocabulary and I had to look a lot of them up in a dictionary"* (P14). Some participants found that certain words were completely foreign, and for this reason alone reported that they were ill fitting in a South African context; according to one particular participant, *"I didn't expect to be using my dictionary for this, but there were some words that I have never heard anybody using. When I looked them up I understood the meaning perfectly and I thought that there could have been a more common way to say it"* (P4).

Many difficulties were observed for participants whose home language was not English. In these instances, participants reported that their exposure to colloquial or figurative English is limited. Furthermore, some participants reported that while their vocabulary was improving, their overall exposure to advanced English was slightly lacking; *"My English vocabulary can be limited at times based on a lack of exposure to certain 'high grade' words or sayings"* (P15) and *"My English has improved since I've been at university, but I find that when I'm with my friends and when I go home I don't speak English…some of the questions were hard and didn't seem like speaking English"* (P8). All seven of the participants whose home language is not English, found that a lack of exposure to literal and figurative English in general (and Americanisms in specific) made certain items, words and concepts extremely difficult to grasp and answer; *"A lot of the phrases I had never heard before at all"* (P10) and *"Sometimes when I say things in everyday life, I use them to mean certain things, and yet when I saw them on paper they seemed to mean something else altogether. That confused me a lot, and I think my vocabulary is quite good"* (P17).

Overwhelmingly so, the architecture or grammatical construction of sentences in the items was perceived as problematic and difficult to understand at times, coupled with words that don't appear to be common in the South African English lexicon. What is becoming more apparent at

this point of the analysis is that the notion of there being a South African English vernacular is worth noting, and worth identifying as culture specific to South African people. The idiosyncrasies of the South African English lexicon cannot be the same as the American English lexicon, because neither operates within the same socio-cultural milieu. Language can be seen as a mirror to culture, and forms a means with which to describe socio-cultural existence (Babbie & Mouton, 2004). Language is therefore a socio-lingual medium of discovery with which to identify patterns, regularities, themes, norms, taboos and differences. In essence, the same language will form unique qualities and specific differences according to its context; this is what a vernacular is, and this is what is worth noting about South African English. As evidenced during the literature review, it is widely agreed that the influences of an individual's home-language can be a potent source of bias when the participants differ in proficiency in the test medium (Abrahams, 1996; Heaven & Pretorius, 1998; Horn, 2000; Laher, 2008; McCrae & Terraccianno, 2005; Piedmont, Bain, McCrae & Costa, 2002; Van der Vijver & Rothman, 2004).

Although the multicultural sample of university students in this study showed good and excellent English proficiency – as is to be expected of postgraduate university students – the participants still reported some difficulty, not only with English word fluency, but also with the Americanised language and sentence structure. In many cases, "even when linguistic skills are not being assessed, the level of proficiency that is required to answer items of personality instruments is often quite advanced" (Van der Vijver & Rothmann, 2004, p.5). However, in a highly diverse nation such as South Africa, where we have a minimum of 11 first language possibilities, one may begin questioning the value of using advanced English, or advanced Americanised English, in personality assessment that is meant to evaluate individuals from all walks of South African life.

It appeared to be unanimous amongst the responses the test-taker's socio-economic status (SES) was of particular importance to the evaluation of the items. In many cases, the sociological concept of SES is linked to an individual's access to higher education (or good quality primary and secondary education) and therefore an exposure to advanced English. In other words, the issue is whether the individual's resources enabled him/her to obtain a good education and

access to opportunity, in so much as he/she would be able to comprehensively deal with the English and westernised references that are undoubtedly present in many instruments such as the NEO-PI-R. Generally, the participants felt this assumption could not be made for the majority of South Africans, and that some test-takers would be severely disadvantaged when taking the NEO-PI-R in its current format. It should now be evident that a more sensitive approach is needed towards a range of socio-economic challenges as well as the potent effect that home-language enforces upon an individual's lingual frame of reference. Essentially, using the NEO-PI-R in the South Africa context is ultimately already pointing to the following reality; that lingual and culturally relevant revisions may be required if the test is to be appropriate, unbiased and fair for South Africans, under the prepositions of the present study.

Open-ended Question 2

Were there words, concepts or items that you thought were inappropriate?
Words, meanings and concepts were not contextualised for a South African audience
Inappropriate references to socio-economic & socio-cultural factors were made
Unfamiliar phraseology and differing grammatical structure

Table 5.7. – Emerging themes from open-ended question 2 of the questionnaire

Three themes emerged during the second part of the thematic analysis, as tabulated above, and indicated that the participants discerned several aspects of the NEO-PI-R that may be inappropriate for a multicultural South African audience. The most prevalent theme to emerge described that many words, meanings and concepts were not contextually appropriate for South Africans. One particular participant noted, *"…phrases like taking a vacation aren't appropriate. We don't use that word – we use 'going on holiday' – even though I know what it means, I still don't feel that it's a familiar term for me"* (P19).

In a similar statement by a different participant a shared sentiment is evident; *"I felt that some concepts were not fitting for all types of South Africans. For instance, I don't think that the concept of going to the movies as a leisure activity would be appropriate because not everyone has the money or the resources to do that. Also, using the words 'in the woods' or talking about log cabins is a very Northern Hemisphere thing. Those concepts are not appropriate for this context"* (P14). This participant made reference to an important idea by indicating that many of

the words and phrases described a *"Northern Hemisphere thing"*. This is interesting considering the fact that most of that region – particularly the United States, where the NEO-PI-R was developed – is considered a *first world* country and therefore has more, and in many cases different resources available to the people. One cannot begin to compare the majority of South Africa on this yardstick. In particular, the participants observed several inappropriate references to a high stratum of socio-economic status; in other words, many items and concepts were geared towards the daily activities of middle, upper-middle and upper class individuals – or *first world* individuals – which does not represent the South African majority. According to one participant *"…no words were inappropriate for me, but they would be for people with a lower education or a lower economic class. Words like 'Las Vegas' and 'roller-coaster' will be inappropriate for people who have never had the opportunity to go on a roller-coaster before, or who know about Las Vegas"* (P6). Presumably these ideas and concepts are not contextualised for a South African audience.

There were also several ill fitting items and ideas from a socio-cultural context, presumably because the items were constructed within an American cultural milieu and with an American English lexicon in mind; *"Sometimes the question/item was double-barrelled according to my understanding; thus, in order to answer honestly I had to cross out the things that least applied to me or my circumstances. The problem is that that is not supposed to be an option in the test, which is why I thought that certain words and items were totally inappropriate and phrased quite poorly"* (P10). These types of sentiments seem to indicate that from a South African perspective, the words, the word order, the literal intent of the sentence, and the sentence structure itself can be confusing and easily misinterpreted by English speaking South Africans.

As addressed in Chapter 3, when a language is formed and flavoured by a foreign culture (e.g. Americanised English), that lingual material looses parts of its appropriateness, relevancy and meaning to its receiving audience, who in this case are South Africans. The reason as to why this is happening is presumably because language tends to be heavily laden with collective cultural experience and context. English is a diverse language spoken globally, but it is almost always adapted and nuanced locally. This could explain the confusion and hesitation experienced by participants in this study. According to one participant "*I often thought that*

words being compared in one sentence actually meant two entirely different things, e.g. when the test asked you to say whether you think you're x and y, I found that x and y weren't even related in my mind, and that I agreed with x but not with y" (P18).

Lastly the unfamiliar phraseology and grammatical sentence construction, as discussed in Question 1, was a recurrent theme, and indicated that the participants perceived the sentence structure as inapt in the South African context and therefore inappropriate for South Africans; *"…some of the ideas and words did not seem to fit in the sentence and the meaning of the sentence, and with those word/s it didn't seem to make any sense"* (P5). Many participants reported that they had experienced mild to severe confusion while completing the NEO-PI-R; *"…there were several times during the test that I found myself hesitating, not because I didn't understand the words, but rather because the way the sentence was asked seemed unusual to me"* (P3).

If one is to glance over the participant's responses in Table 5.5, the fact that some of the sentences and words were found to be confusing, unclear and made little sense to the participants, evidences that language bias may be profoundly apparent. According to Poortinga and Van der Vijver (1987), language bias may emerge if the instrument's instructions or the actual test questions are ambiguous or unclear, and ultimately may lead to aspects of the test itself being misunderstood or misinterpreted. Language bias is the most common form of bias, especially in multicultural studies where an instrument is administered in a language that is the second or third language of the participants, simply because of the way it critically confounds the test scores. In fact most sources of language bias (a type of item bias) in the present study may be as a result of problematic language in the meaning of the item (grammatical or figurative speech), inappropriateness of the item content for specific cultural groups and also the influence of culturally specific connotations for certain words. Item bias can be especially prolific where idiomatic usages of language differ from one context and/or culture to another, such as the scenario with using the NEO-PI-R in South Africa (Rust & Golombok, 1992). This effect can be clearly identified from the thematic content analysis of the open-ended questions.

5.3.3 Thematic content analysis of the focus group discussions

The thematic analysis of the focus group discussions evaluated the subjects' dialogue and debate in response to the researcher's questions. The researcher had a pre-formulated guideline[30] from which both groups were questioned, therefore covering the identical topics. For the purposes of the analysis and presentation of results, the researcher grouped comparable responses from the two focus groups, and developed three main thematic clusters that have been tabulated (Tables 5.9 – 5.11) for ease of discussion. Direct quotes from the focus groups will be coded to protect the identity of the participants[31]. Focus group one will be abbreviated with an X and group two with a Y. Participants will be numbered as follows;

Focus Group one	**X1**	**X2**	**X3**	**X4**	**X 5**
Gender	Female	Female	Female	Female	Female
Population group	White	Black	White	Black	Coloured
Focus Group two	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
Gender	Male	Male	Male	Female	Female
Population group	White	White	Indian	White	Black

Table 5.8. – Coding for Focus Group Participants

To follow are each of the three main themes of the thematic analysis, accompanied in each table by the prominent premises and ideas that make up each of the thematic clusters. As has been done previously, there will also be an indication of how often each premise recurred during that particular theme, giving a clearer representation of how each theme is comprised. The tabulated results represent the combined analysis for group one and group two, followed by a brief discussion of each result, leading finally to an integrated discussion.

Theme One – An understanding of personality

The first theme to emerge amongst the participants was a general perception of what personality is, as indicated in Table 5.9. The participants raised opinions about their understandings of personality, and generally what emerged not only described personality as a concept from the

[30] Refer to Appendix I to review the focus group question outline
[31] Refer Chapter 4 for a more detailed summary of Focus Group Descriptive Statistics

point of view of psychology students, but also described it's meaning to lay people and how it affects everyday life, both intrapersonally and interpersonally.

An understanding of 'personality'	
Group Premises & Ideas	**Frequency**
Expressed through behaviour and speech	12
Recognisable traits (what others see); observable actions in a life	11
Traits & characteristics (shape & flavour of who you are)	11
A personality describes 'you'	9
A unique, natural phenomenon; imprinted	9
Influenced by a person's life experiences, history & family	7
Linked to & impacted upon by the socio-cultural environment	7
How people deal with situations; guides interactions with others	6
Introversion & extraversion	4
Changing & evolving	3
Defines the ways we think and reason	2

Table 5.9. – Emerging themes from thematic cluster one

The most common understanding amongst the participants was that personality is that part of the unique self that is expressed through behaviour and speech. All the participants agreed that a personality can be identified, described or defined by what others see, that is observable behaviour, or traits that are recognisable as being usual and characteristic to that individual. Personality was also described as being a unique set of traits that gives an individual a type of distinguishing shape and, as X1 states, *"a personal flavour"*. Further, it was identified that personality is shaped by a combination of genetic predisposition and environmental factors such as culture, family, life experiences and national history; Y1 commented that *"…the environmental factors such as a person's cultural frame of reference or their cultural history, will sort of, interact with their unique characteristics (*gesturing an oscillating movement with his hands*) to create all the unique qualities of a person's personality".* This overall understanding of what personality is set the focus for the group.

It was evident that each focus group understood the aspects and functions of personality within an individual, and that they had centred themselves within a discussion that would be dealing with such themes and concepts. The ideas raised amongst the participants are congruent with noteworthy sources of personality theory, all indicating that traits are thought to form the shape

of the individual personality. Furthermore, that traits are relatively stable or enduring individual differences in thoughts, feelings and behaviours (Larsen & Buss, 2005), and that one's personality is an expression of local psychologies, which are rooted in the experiences, ideas and orientations culture (Church & Katigbak, 2004).

Theme Two – Unique South African culture that influences personality

Based on both focus group discussions, another theme centred on the idea that as South Africans, we have a rich and unique culture, which despite our varied backgrounds unites us and influences who we are. Theme two explores the existence of a unique South African personality, which was described by the participants as having distinctive qualities that express South African culture, languages, ways of thinking, and the ways in which these factors interact with aspects of personality. Overwhelmingly, the participants felt that a South African personality is apparent, and is significantly influenced by culture and context.

Unique South African culture that influences personality	
Group Premises & Ideas	**Frequency**
Significantly influenced by culture	38
Strong contextual influence; shaped by socio-cultural factors	30
An inclusive mentality Very specific and unique mentality; 'our own thing' distinguishes us	22
Relaxed, flexible, adaptable & open to change; strong survival element	18
Lingual diversity; unique way of speaking, thinking & behaving	16
Linked to traditional factors and belief systems, and respective norms	12
Significantly influenced by language	11
Metaphysical quality; its beyond words, yet very recognisable; embodies all things we instinctively know and accept just by being here	10
Socio-cultural diversity; possible to have one main appropriate version of a SA personality	9
Our own version of being 'westernised' in South Africa; a more culturally rich version, sometimes resisting Euro-Americanisms	9

Table 5.10. - Emerging themes from thematic cluster two

If one considers for a moment, the many languages that are spoken within the borders of South Africa, as well as the many different cultures and belief systems associated with that language, one might begin to notice a large degree of cultural interception that takes place within and between these different groups. This includes understanding the obvious characteristics as well as the subtleties about personalities in the South African milieu, and the way individuals

understand their community, their upbringing, collective cultural experiences, patterns of thought and speech. This sentiment was echoed during the second focus group discussion when Y2 stated, *"I think this idea of a South African personality comes out of the contextual or the environmental impacts… So with us I would think that it would be the unique social factors; like what makes us specifically South African; for instance, the fact that we have braai's and not barbeques, and having jerseys and not jumpers, wearing school uniforms, having been through the apartheid and nowadays respecting each other's cultures"*. Y2's statement provides some good examples of cultural specifics that are unique within our socio-cultural understandings, and therefore create the cultural standpoint from which we view the world around us. Essentially, the point of interest is that the participants felt that the South African personality is a unique product that arises out of the interaction between the ubiquitous quality of having personality and the unique socio-cultural events that South Africans experience. Thus, our personalities are very much contextualised within our socio-cultural setting.

Personality in the South African context involves an ascription to several unique South Africanisms; this is what makes the nature of our people distinctive; as Y1 states, *"this includes certain cultural beliefs, or traditional or historical events that happen in our country. Even the sociological events that happen in our country, like crime… so people have personality, and then there's the context that they find themselves within. So it's difficult to separate the two, and that's the point where the South African personality finds expression"*. The idea that there is a distinct South African mentality that exists was a strong recurrent subtheme in this section. The participants describe South African mentality as the things that go on between South African people, making us understood within our own culture, and making us unique when compared to other cultures; X3 concurs, *"…I think our South African mentality has developed out of a very integrated cultural environment, where sometimes you see more of the Western mentality and sometimes more of the ubuntu side of the nation comes out…and I think we all fit into that mould"*. The participants agreed that South Africa is a very diverse nation, resting on both traditional and global rhetoric. Indeed living in this environment renders a very distinct mentality, and most of the participants identified that a highly inclusive way of thinking and a character that is open and adaptable to change underpin the South African personality as a whole.

Identifying a common thread of cognition, or a shared way of thinking and perceiving amongst South Africans is important because it is an expression of our national identity; our past, our present, and where we anticipate going in the future as a country. All this experience includes both heritable aspects and ambient events, which help form national identity and then personality within it. Heritable aspects, such as cultural specifics, language, traditions and ingrained systems of belief, reasoning and value, combined with the flavour of ambient events such as political, historical and social change and movement, contribute to the cultural specificities that find expression through universal structures of personality. Especially in South Africa where rich collective experience is less the exception, and rather the rule, the role of latent culture is an important part of understanding the shape of a 'South African personality'. It also addresses psychology's question of how to operate appropriately within psychometrics and how to respond appropriately to national identity, and therefore to South Africans as a unique group of people (Gibson, McKelvie & DeMan, 2008). Therefore cross-cultural personality testing has at its core, a drive to be sensitive to an individual's cultural frame of reference, while corresponding with the high international standards created within psychometrics (Cheung et al., 2008; Church & Katigbak, 2002). Being sensitive and culturally appropriate in a psychometric approach makes a league of difference to the actual test scores, reliability thereof and the validity of the score in the South African context. As Y4 states, *"If you're looking at individuals within South Africa, or at individuals within America, or Europe…you're probably going to find many similarities on the surface. But then once you start defining those similarities and defining the meanings of those similarities, you're obviously going to start finding the different life symbols. In fact you start finding a unique identity instead"*.

The idea of the shared metaphysical qualities of South African people and personalities was the natural progression from the idea of South African mentality. The participants described this concept as being undoubtedly present in all South Africans, very recognisable in terms of traits, and yet difficult to categorically define. About the metaphysical traits of South Africans, X1 quipped, *"I know I have them, but I have no idea what they are!"*. Bronislaw Malinowski, the father of socio-cultural anthropology, names these sorts of socio-cultural intangibilities, *imponderabilia*, precisely because one may know they exist (even how so) but cannot easily

describe them (Thornton & Skalnik, 1993). What was concluded was that the metaphysical traits of South Africans embody all the things we instinctively know and accept just by being here; by living, or having lived in South Africa and understanding its people; truly, the *imponderabilia* of being South African. It is an interesting type of cultural capital that is only available to South African natives, and speaks of collective existence and understanding, as well as localised intertextualities within the ways that we communicate and make sense of the world. As X2 stated, *"As much as you know we may all be unique, there are common things that we have, maybe like the way we speak, or the way we understand each other…or the things that we know living in Jo'burg or in South Africa"*.

In a study on the NEO-PI-R in Tswana and Americanised English, conducted by Piedmont et al. (2002), the researchers suggest that one of the major problems concerning the use of imported inventories, and even the translations thereof, is ultimately that the development, administration and oftentimes the translation is assisted by non-locals. As suggested by the researchers, it takes a lifetime of collective cultural experience to be able to truly connect with a people or a language, and therefore the development and standardisation of a truly congruent and appropriate indigenised inventory may only be achieved by locals; those who have an understanding of the discrete personality and cultural variable at play in particular community, as well as the *imponderabilia*.

From one perspective, it can be said that *this is* what a South African personality is; however from an anthropological perspective it may be more accurate to say that *this is* the cultural haze through which the personality operates. Thornton and Skalnik's (1993) concept of cultural haze can be thought of as the figurative aura of socio-cultural and contextual information that floats around us constantly, tinting the way we see things and influencing the way we behave. We look through it, we speak through it, we think through it, and it is the haze that is unrivalled in the way it influences the natural expression of personality. Y5 explains that, *"…in African cultures there's a lot of things…you're not allowed to do or say, even though your personality may be a certain way, or you might be the type of person that would want to act in a certain way. Because of the cultural boundaries and limits there are certain things that certain individuals should and shouldn't do regardless of what their personality is telling them. So very*

often this has a great impact on what you think, what you say, how you behave, or what you think is important or valuable in life. It influences the way you see the world". Similarly, X1 states that, *"personality is linked to culture, in the… community that you're brought up in, the way you're taught to think or reason, and understand other people in your environment. I think it all plays a role in the development of your personality"*.

The way in which this specifically relates to this study, is the use of appropriate language in the NEO-PI-R. The creators of the NEO-PI-R developed the test through an American linguo-cultural haze – so to speak – and therefore as South Africans we cannot expect to entirely relate to that cultural haze. Despite the fact that both nations speak 'English', the English in the test is formulated through a completely different socio-cultural perspective, and cannot be entirely appropriate in this context. As Y5 explained, from a South African perspective some socio-cultural discrepancies may exist in the NEO-PI-R that will influence the efficacy of participants' responses. When evaluating the use of the NEO-PI-R in its current format for use in South Africa, a pertinent question arises; whether the test makes reference to American 'life symbols' as described by Y4 previously. The qualitative results of this study indicate that it certainly does, since the NEO-PI-R was developed in the United States. Consequently, it does not contain South African life symbols, sayings and cultural features, and cannot fully accommodate South African socio-cultural systems of meaning making. X3 describes, "*You know its so easy to understand people or culture if you really know the language, cos it allows you to interact more comfortably, and to understand the way people think and the way they understand things, if you know how they describe or speak about those things. And that goes back to the personality of that culture quite strongly I think; you really get a feeling for that cultural mentality from the way that they speak"*.

In similar vain, the integrity of Piedmont's et al. (2002) study was increased and validated because the second author (EB) had lived and worked amongst the Shona people for many years, becoming highly acquainted with the many subtleties in speech, thought and behaviour, which reinforce the degree of connectedness to the culture and the language. The point that X3 makes is important because it carries issues of both national mentality and the role of language. The value of this comment tells us how inextricably linked language, culture and the expression

of personality can be. Even when the testing medium is English, the actual language could be the confounding factor from a cultural and a lingual perspective, especially when that English is generated in a foreign context. From a cultural perspective the language subtleties may seem different because the cultural life symbols are different or misinterpreted. From a lingual perspective, the test scores can be influenced when the use of English is neither the participant's home language, nor the localised version of the language.

Using words, ideas and concepts that are removed from the socio-cultural context of the test-taker do not go unnoticed. People understand that which they perceive to be familiar, and everything passing that category by is otherwise unfamiliar. Subsequently all of the participants noticed that the instrument was inappropriate at times, and in some cases was utterly misunderstood or not understood at all. Participant X3 recalled that, *"there were quite a few questions that I had a problem with from a contextual point of view…the one example that I can remember now, mentioned Las Vegas. Now the only port of reference I have for that one is the TV show! No seriously though, that was inappropriate"*. This is precisely the type of American cultural capital, contained in a word, that is entirely inappropriate in the South African context. The creation of an indigenised or localised understanding of speech, action and interaction is central to the discussion of the NEO-PI-R because it relates to the appropriateness and applicability of the instrument in the South African context. A paradox worth noting is the degree to which South Africans have become more culturally unique, while becoming increasingly westernised over the past 15 years (a typical cultural event worldwide, nowadays). This is to say that while we have embraced global culture and American things, we have made those things our own by indigenising them or adapting them to a local system of meaning, and in turn become more cognisant of that which is culturally uncontaminated. Therefore it is not surprising that we interact with American ideology with ease, however, it is not to say that we fully connect and understand the cultural specificities contained in English generated from the American context. However, one cannot speak about this type of socio-cultural event in isolation of Eriksen's (2001) concept of glocalisation; the fact of the matter is that we respond better to our adapted versions of Western ideologies – our indigenised versions of things – than to Western ideologies alone.

The role and influences of American media in our lives needs to be addressed at this point. Overwhelmingly so, the participants felt that although some South Africans are exposed to a great deal of American pop culture via the media, one cannot assume that all South Africans will therefore understand the complexities, subtleties and nuances of the American socio-cultural milieu. While we have embraced Western culture, we have also made those things a unique *glocalised* product; our own by indigenising them or adapting them to a local system of meaning. Therefore it is not surprising that we interact with American culture with relative ease, however, it is not to say that we fully appreciate the cultural subtleties contained in English generated from the American context. Ultimately, the NEO-PI-R was developed with the American socio-cultural setting in mind, and therefore cannot be entirely appropriate for individuals other than Americans themselves. Despite these notions of comparability and incompatibility, it remains that South Africans are, to some extent, familiar with Americanisms and the American context, albeit a foreign culture. However, we cannot assume that familiarity with Americanisms translates into the appropriateness of it in the South African context; it certainly does not. When we apply this concept to the NEO-PI-R in the South African context, it is reasonable to question the appropriateness of the language medium of the test, and to question why we have expected South Africans who may or may not speak English fluently to perform well. After all, it may not even be the type of English to which South Africans are accustomed to speaking or hearing. In fact, one may say that it makes little sense to require South African test-takers to adapt to the foreign figurative and literal language, as well as foreign cultural capital in the NEO-PI-R. The excerpt below echoes this sentiment;

X 2: *…we're exposed to a lot of things from America; if it's not the TV, it's the books, or the shows, or music… the reason why we may be familiar with a lot of American English words is purely because of that. But just because of that it doesn't mean that we can connect with those words, or that we use them, or intuitively know the subtextual meaning of the words.*

X 4: *Yes and if that's the case, then wouldn't you say that a lot of 'less fortunate' South Africans might be familiar with words from an American context, even though the words aren't applicable here? So then they may be answering things that they have never seen or experienced, but that they have seen or heard about on TV. So that's not first-hand information about their personality. Like asking someone from the location about a forest or scuba diving or something! It isn't applicable.*

A similar discussion took place during Focus Group two, about using the NEO-PI-R in its current form in South Africa. These participants present a controversial two-pronged approach in the argument; initially they explored a view that this study strongly opposes, and a view that essentially underpins the dire need for this type of continued research on the NEO-PI-R. Thereafter the discussion returned to the concepts of appropriateness and applicability that are central to this study. The following excerpt was taken from a discussion of how American media may help or hinder the use of the NEO-PI-R in its current format in South Africa;

Y 3: *Don't you think that's its less of a problem now because so much of television that we watch is American?*

Y 5: *But I mean some of the words were totally out of my understanding. I was like "what?!" Who uses these words anyway?*

Y 3: *No, no, what I'm saying is that it's less of a problem now that we're inundated with American television.*

Y 4: *No, I don't really agree, because that's your environment at home. There are so many South Africans who don't have DSTV or who aren't exposed to all the foreign pop culture. So I still think the appropriateness of the test is still a problem for South Africans.*

Y 1: *I think you run into a situation of 'the lesser of two evils' with using the test here, because even though there is a problem essentially, it's uh-- if you want to create a homogenous scale for the whole world, [the NEO-PI-R is] probably the most recognised, because Americanisms are the most recognised. Everyone has contact with them in some way or another, either through the TV, or whatever. So I think in terms of that, it's the most collectively recognised way to assess people, and would then be the most appropriate way.*

Y 4: *I think the other is the lesser of the two evils – because I think what you're saying is more 'evil': to presume a homogenous thing. You can't actually measure what you're supposed to measure; people just won't always understand it. It won't be appropriate for all people at all. We can't compare ourselves like that across cultures, across borders, and also that we don't all have the same first language anyway. I think considering the NEO as a 'best match' scenario is actually ignoring the needs of South African test-takers.*

Y4 raised a point of paramount importance for the present study; as long as the NEO-PI-R is continually used in its current format for South African user groups, it may continue to exert elements of bias at an item level, which includes language bias and to a lesser extent construct bias, and cultural inconsistencies upon its audiences. Van der Vijver and Rothmann (2004) suggest that when the cultural standing of the user group varies from the cultural frame of reference of the instrument, the measurement of underlying constructs can differ from the acceptable norm. In other words, an item can be biased if it favours one cultural group; in the case of the NEO-PI-R, the favoured group is the norm population, which is American, and South Africans cannot meet the specificities of American socio-cultural norms. By this rationale, the most sources of item bias in the present study may include several ambiguities in the meaning of the item (grammatical or figurative speech), low familiarity or appropriateness of the item content for specific cultural groups and also the influence of cultural specificities such as the culturally-bound connotations for certain words. Importantly though, one cannot state that the NEO-PI-R is unreliable in the South African context, because it is a valuable test. However, the problem is that the NEO-PI-R's suitability is not absolute because of the differing cultural and lingual perspectives of a South African user group. Succinctly, not all South Africans will respond well to the NEO-PI-R in its current format.

Many participants felt that the localised versions of Western things were more culturally rich, and therefore made them unique and distinguishable from anything else that is available; some examples include language, cuisine, and fashion. When discussing this concept Y5 aptly replied, *"I think I might go for a patchwork of culture. There are just so many diverse elements, which are definitely uniquely 'ours' that would make up the larger South African blanket"*. Interestingly, Y5's statement actually indicates the observance of cultural diversity and global trends in our nation, and the ways in which it has cultivated an inclusive mentality and a glocal adaptation to the Westernised influences in South African culture. Using the English language as an example, South Africans understand a local and adapted English lexicon better than the American English lexicon, even though they resemble each other to a large extent. As X5 states, "*We are so open to change and adaptation in our…environment, I think, and that really reflects on the way that we have handled westernisation; like where we have come from, and where we are today. Ja, we have just kind of, gone with it, you know, and really embraced all*

the differences and incorporated it into our community. And I really think that these days whether you're saying "Holy mackerel", "Jissus" or "Eish" everyone will know what you mean". Thus, the NEO-PI-R may be recognised and accepted by South Africans; what is not appropriate, is to expect that the essence of the cultural specificities in the American English medium will be fully understood by all South Africans, despite our *glocalisation*.

According to the participants, South Africans appear to be resilient and accepting of change or difference, and have socio-politically shown a trend to make these conflicts work together towards resolution. In fact, as a national culture we are intently keen on resolution as an activity and as an ideology; in the face of uncertainty or adversity, South Africans prefer to talk towards conflict resolution. Whether meetings are called, or talks are held, or commissions are created, talking up a solution is a strong intercultural trait amongst South Africans. This important characteristic underpins another dominant factor in the theme of a South African personality; the flexibility and adaptability of the South African personality. Participant X5 supports this sentiment; *"…a South African personality is actually very flexible; in the ways that we think, speak, and understand things, I think we show that our ways as a people are quite flexible; like if something is not working, it's okay…I'll try do it some other way! Hakhunamata!"*. The participants fondly labelled the adaptable nature of South African people as an *'elke boer maak a plan'* mentality[32]. The general assumption to be made of South Africans is that we are accepting and tolerant of change, adaptable under conflict, and eager to drive towards a resolution. Many of the participants felt that South Africans have a strong survival element within the expression of themselves and their personalities, both as individuals and as a collective cultural characteristic. X1 concurs; "*I think that perhaps a South African personality is an adaptable personality, willing to change and move, go with the flow and…still hold onto some cultural elements as well. So it's a very richly contextualised personality"*.

These qualities are of great importance in light of this study, precisely because a clearer understanding is needed of how a South African personality corresponds to the NEO-PI-R in its current format. What can be said qualitatively is that according to the participants, a South

[32] This is an Afrikaans saying that translates to 'every farmer makes a plan' and refers to an individual's resourcefulness in problem solving, and the ability to make an adverse situation turn out for the best.

African personality is not neurotic or tense, and instead has a very relaxed, agreeable quality. What has been established up to this point is that the domain of Neuroticism was problematic and Agreeableness was the least problematic, potentially meaning that the participants felt most comfortable and familiar with items exploring the construct of A, than they did with items exploring the construct of N. A similar finding in the qualitative results presented in Table 5.5 shows that the words, phrases and concepts evaluating N were identified because they were difficult to understand and make sense of. However, during the qualitative analysis Agreeableness items were found to be problematic from a language perspective, despite the fact that they were the least problematic during the quantitative analysis. This result is explicable; although the words, concepts and ideas in these items actually express the agreeable nature of South Africans – according to both focus groups – they were generally the most difficult items to understand. What this phenomenon may be pointing to is an issue of language bias, whereby the use of advanced and foreign English may be the source. Although the South African personality is described as agreeable, the domain was frequently cited as problematic because the participants did not understand the words, concepts or ideas in these items. Importantly then, this phenomenon may be indicating at this stage that A is not being fully and effectively evaluated in South Africans, because of the obstacle of language bias. Descriptively, this sets the foundation to begin hypothesising about what a South African personality 'feels' like. At the outset of this task it is important to emphasise that these results were obtained on the sample of the present study, which exclusively used postgraduate psychology students, these findings are exploratory at best. Therefore the generalisability to a lager South African user group is very limited, however they are also rather thought-provoking considering that more research may well support this argument on the national character of South Africans.

If we turn to the A and N facets relative to the claims above, the South African personality may embody strong expressions of Altruism (A), Compliance (A) and Modesty (A) and weak expressions of Anxiety (N), Depression (N) and Vulnerability (N). Especially at a facet level, this suggests that the N constructs are only weakly represented in South African culture. Therefore the 'feeling' of a South African personality is more about being good-natured, accepting and humble than it is about tension, hopelessness and timidity. With South Africa's violence and crime challenges beleaguering all walks of local life, one may expect N to be

higher. The fact that it is not reinforces the prominence of the alleged accepting mentality of South Africans, who, according to the focus groups, are said to have high adaptability and tolerability, and a focus on conflict resolution. Therefore it is suggested that the proposed South African personality identifies with N to a lesser extent, highlighting the difficulty in replicating this domain statistically.

Theme Three - Language and personality

Another theme to emerge strongly was the role of language and the significant influences it exerts upon cognition, reasoning and personality, as indicated in Table 5.11. Language assists an individual to make sense of the world around them, by using words and understanding of words to make informed, contextual and appropriate inferences about concepts, people or objects in the environment. Operating within this dynamic is culture, and the ways in which language is nuanced and culturally *flavoured* in context by culture; recall, the poignant analogy from Przeworski and Teune (cited in Poortinga, Van De Vijver and Van Hemert, 2002) about a belch and nepotism[33].

Language and personality	
Group Premises & Ideas	**Frequency**
South Africans speak differently, both colloquially and grammatically; the essences of words, themes or concepts may not be the same	36
Language, culture and context are inseparable & are linked to the expression of personality	26
Meanings are lost, changed or misdirected as the context shifts	19
Multilingual society; many dominant languages, therefore many cultural & lingual influences	18
Lingual fusion, i.e. mixing of 2 or more languages in daily communication; unique in the 'way' that we speak	16
Speech is very diverse and unique; a strong 'adaptable' nature	15
Role of American media in our lives	14
Unique cultural patchwork that is distinctively different to mainstream American culture	13
Differences exist in the English language when the context is changed	12
Language in context has essence and contextualised meaning	11
Unique South African accent with lingual and grammatical idiosyncrasies	8
Difficult to fully capture the essence of certain words or meanings across languages	8
Unique South African colloquialisms that describe personality, behaviour and thought	7

Table 5.11. - Emerging themes from thematic cluster three

[33] Refer to the discussion on Comparative and Supportive Research in Chapter 3

Essentially, language and culture are fundamentally linked, and operate through each other. As Y3 points out, *"…from a linguistics point of view, language and culture are not separable. As part of the defining features of any culture, is the language that is used. For instance the question of 'why' a particular word is used is very important – our 'braai' for example…is linked to many other understandings of a social or cultural context".* Indeed, our understanding of ourselves and of personality is wholly and thoroughly language-laden. When speaking of personality or individual characteristics, one uses language to make sense of and describe those observations, and this use of language becomes indigenised or culturally specific within its context (Babbie & Mouton, 2004). Therefore as the participants have pointed out, the importance of closely examining the shape and nature of South African mentality, speech and lingual patterns, cultural thought, sentence structures, is essentially moving towards a clearer definition of what is appropriate and applicable for South African people in the test environment; Y1 states that, *"…you do describe peoples' personality using adjectives essentially, so I mean its, integrally, wholly and thoroughly language-laden, and its constituted of language at a very basic level, someone's personality. So ja if I asked you to convey the basis of something, like personality, you'll do it through language"*. Thus, language is at the centre of understanding ourselves, other people and the environment around us. If one is to engage with the NEO-PI-R, which requires an individual to evaluate him/herself with respect to other people and the environment, it seems imperative that the language medium is clear, culturally consistent and appropriate for the test context. Conversely, instruments such as the NEO-PI-R, which have not been revised for the South African context, may not fully provide the means with which to assess oneself in a local context, from a local standpoint. Ultimately, what needs to be established in the future for a South African user group is two main factors; firstly, are the five domains of the NEO-PI-R, and the FFM for that matter, an appropriate evaluation of personality in the South African socio-cultural milieu, and secondly, whether this result will support the use of the lexical tradition or the questionnaire tradition – such as the NEO-PI-R - in South Africa (Allik & McCrae, 2002).

A sub-theme that arose with surprising vigour was the acknowledgement and affinity for 'lingual fusion' in the South African personality. The meaning of this term is simply the mixing of two or more languages in everyday speech. All participants fervently agreed that in South

Africa we have many viable cultural permutations in any one environment, and therefore a defining feature of the ways that South Africans communicate is through fusing meanings and words in order to capture a full and contextual meaning. As X3 states, *"When I'm speaking I'll throw in a bit of Afrikaans or Zulu, or a bit of Hebrew, to kind of emphasise what I'm talking about or something that I'm describing… And I think if you're from another country, you might get lost in the way that South Africans speak, because I think we all do that, you know, we speak the way we think, and the way we think is quite cross-cultural a lot of the time. We really do mix a lot of our culture, and then obviously languages too"*. What is important about this statement is ideological in nature; it emphasises the cultural diversity in South Africa, and the ways in which South Africans embrace that diversity as a valuable and culturally congruent dimension of being South African. However, the present study does not suggest that South African psychometrics invest extensive funds to develop a *Kombuis taal* or *Fanakalo*[34] version of the NEO-PI-R. What the present study is suggesting is that we need to understand the flexibility and adaptability of South African cognition and personality in order to assess the current NEO-PI-R's appropriateness for South Africans, and perhaps move towards creating a more culturally competent version. What has been established in the present study thus far is in basic support of the NEO-PI-R's generalisability and apparent universality across cultures (McCrae, 2000, 2002b; McCrae & Terriaccianno, 2005). This is evident in the present study; the quantitative results show that none of the domain scales were significant. This in turn suggests that a five-factor structure may be present in the sample of the study. The problems however, are the facets of the five domains; these appear to be problematic due to language and grammatical difficulties and inappropriate socio-cultural content. Therefore the argument herein is in favour of adapting the problematic items, in lieu of creating an entirely new instrument, as has been done in the case of the CPAI-2 (Cheung et al., 2008) and the SAPI (Meiring, 2007).

[34] According to Adendorff (2002) *Fanakalo* or *Fanagalo* is a pidgin (simplified language) based on the Zulu, English, and Afrikaans languages. It is used as a lingua franca (a Frankish language), mainly in the mining industries of South Africa. *Fanakalo* is primarily used as a second language. The name *Fanakalo* comes from three Nguni word forms meaning "liken" "it" and "that" and has the meaning "do it like this", reflecting its use as a lingual bridging between cultures and a language of instruction. Adendorff (2002) also mentions lingual equivalents to *Fanakalo* spoken and understood around the Southern African region, such as *Kombuis taal*, *Chikabunga*, *Chilapalapa*. *Kombuis taal* is a common Afrikaans phrase that translates to 'kitchen language'. Its meaning as a phrase is that language, like food in a kitchen, can be harmoniously combined to create a meaningful end product. *Kombuis taal* is usually used to emphasise meaning, and improvise meaning, and is an unofficial language that all South Africans 'speak'.

The concept of mixing culture and language consequently emerged as a strong theme throughout the focus group discussions. Generally, the participants expressed that South African culture is defined as being inclusive, and that what distinguishes us rather clearly is our ability to incorporate several dimensions of different cultures (be it ethnic culture – Zulu – geographical culture – Jo'burgers – or pop culture – Westernisation) and creating an indigenised, or localised combination of all. It is the intersection of influences that creates the unique South African perspective, and this is very much an expression of our recent socio-cultural progression in South Africa. Our collective experience as a country over the past 15 years, has come out of segregation into the embrace of the collective decision to unite. What arises from this new South African ideology is quite literally an inclusion of many influences into every single individual. Language is no exception to this event. Arguably, the way we speak and understand each other has evolved, even from the point at which the NEO-PI-R was first authorized and introduced into South Africa.

A strong subtheme to emerge at this stage is the agreement that South African English is unique because it has distinguishing lingual and grammatical idiosyncrasies. Besides the presence of a unique accent, South Africans have a unique way of speaking, both colloquially and grammatically. It is decidedly different from other English-speaking nations. This means that we have South Africanisms in our everyday speech and different understandings of English figurative speech. In both cases, this aspect of the South African English lexicon is very much a contextualised phenomenon. Many of the participants felt that one of the defining landmarks of South African English is the way it is structured in comparison to other English-speaking nations, such as the United States. Y4 stated that, *"…we also have a slightly different way of speaking; you know, the literal and the figurative language; when we say "a few times" we don't literally mean three times, sometimes it just means many times. So that could be an issue in South African English; there's a big difference between literal and figurative language. I'd even go as far as saying that every different English-speaking nation has their own meanings of literal and figurative English".* This point may be of obvious value, when we consider that most South Africans would not be able to fully appreciate the intertextualities of Americanisms or American figurative language. Furthermore, this point was well accentuated during the qualitative analysis of the open-ended questions; one of the defining features of the analysis was

the collective opinion that the sentence structures in the NEO-PI-R were unfamiliar. To reiterate this sentiment; it was not only some words, concepts or ideas that seemed foreign or inappropriate at times, but interesting also the actual sentence and grammatical structure of the items in the NEO-P-R.

The South African English lexicon and the American English lexicon are arguably not identical and differ in many ways because of the socio-cultural setting from which each is developed and understood. Piedmont et al. (2002) suggest that in other Southern African cultures (such as the Shona), some of the constructs measured by the NEO-PI-R, especially at a facet level, simply do not have counterparts in that specific African culture and language. In the present study, this is also true. Two of the most poignant differences for the focus groups would be the unique colloquialisms and figures of speech (as mentioned above), and the grammatical or sentence structure (as pointed out during the group discussions and the open-ended section of the questionnaire) which were deemed culturally specific to Americans.

Overwhelming so, the participants expressed quite some exacerbation over how challenging the instrument was, despite the fact that 75% of the participants rated their English comprehension as excellent and the remaining 25% as very good[35]. Without exception, there was not a single respondent who reported understanding every item of the NEO-PI-R; on the contrary, all participants reported needing assistance in order to complete the instrument, not only because of being uncertain about the meanings of some words, but also because certain words were totally foreign to the participants. The unfamiliar sentence structure in the instrument was repeatedly cited as being problematic. In some cases, the participants described being overwhelmed by the arrangement of English words. Participant X1 reported; *"I was using my dictionary quite often, and I think that I have a really good vocabulary normally; so ja, that really surprised me"*. Reportedly, there were several items in the test that were inappropriate for South Africans because of this reason. Participant X1 in particular, stated that several questions were unclear in terms of how the sentence had been constructed and phrased, and not because of poor English comprehension; "*There were several questions that I actually did not understand what was being asked. So I broke them down into single English words, and it just didn't make any sense*

[35] See Table 4.1 in Chapter 4

to me. I was like "okaaay", and I'm an English speaker and have been all my life…so I just can imagine for someone whose mother tongue isn't English, that must be bloody hard! I don't think they would have any hope in getting those questions, and some others as well". As X1 described her experience – the process of breaking down the sentence into single words – it became apparent that not only was this a time-consuming task to be endeavouring in a test situation, but it was also an anxiety-provoking task. What seems startling is that first language English speakers were battling with certain components of the test to this extent, that a breakdown process was necessary. For an individual who speaks English as a second language, this sort of advanced English is not only extremely intimidating, but may also confound the appropriateness or reliability of test scores. In addition this confounding level of lingual sophistication is arguably completely unnecessary in an instrument such as the NEO-PI-R, which assesses personality variables that are unrelated to English eloquence. Participant Y1 further supports this sentiment; *"What I found as well, was that very often, if you have a good vocabulary – and I think we all do – it wasn't always the words themselves, but the sentences that were very strange to me. I kind of had to read things over two or three times sometimes to be sure. You know, like the colloquial way of speaking, like you'd imagine the way an American would put forward a sentence; I know what they're trying to say, but it really doesn't sound like something I would hear a South African saying. I mean I could figure it out, but its not how we say it; like 'mind-twister games' I kind of had to make-up my mind about what they were talking about, 'cos we call them something else; actually we don't even really use that way of describing those games".* The sentiment between both focus groups was that certain Americanised words and sentence structures were the two most perplexing factors preventing some of the items in the NEO-PI-R from being fully accessible, both to the user group as well as the greater context.

It has been suggested that South Africans in general are more inclined towards global, intuitive, collective and expressive understanding, than to the more detail-orientated, analytic and abstracted reasoning approaches that characterize Western thought processes (Horn, 2000). This sentiment correlates well with the present study's emphasis on adopting the indigo-cultural approach. To understand and assess personality that is inclined as Horn (2000) suggests, requires heightened sensitivity and acknowledgement of a system of meaning that is not the

same as a Westernised system of meaning. Western cognition tends to be more focused on abstract concepts and ideas, whereas African cognition is focused on immediate experiences and collective cultural experience (Piedmont et al., 2002; Vogt, 2009). Furthermore, McCrae (2002b, p115) states that "individual differences might be muted in collectivistic cultures, either because individuals avoid emphasising their distinctive personal attributes, or, more profoundly, because individual traits are less important and salient in these cultures". From this it should be clearer as to why a strictly traditional trait approach may not adequately address the subtleties of an indigenised expression of personality. The valuable insights taken from Horn (2000) and Piedmont et al. (2002) indicate that some concepts and words contained in the NEO-PI-R may not possess cultural relevance for South Africans, and may not have lingual equivalents in African languages, be it for administrative translation or an individual's personal reasoning and meaning-making.

Symbolic Anthropologist, Clifford Geertz (1975), states that language is a vehicle for two messages; general meaning and cultural situatedness. This means that words (even just one word) can give us a wealth of information about the person, the place and the context, on the condition that one is familiar with that context. This type of cultural capital is not a stranger to the discussion and has been addressed previously. As Y5 suggests, "…'*ubuntu' – there is so much more to that word than 'togetherness'. I get the impression that a lot of the time, words come with feelings, and like, without recognising those feelings you could never really understand the deep meaning"*. In the scope of this study, the power of words in particular contexts cannot be underestimated. Throughout this chapter, a common thread of analysis has focused on the presumption that the NEO-PI-R contains several words that are inappropriate for South Africans because of their cultural situatedness within the American socio-cultural milieu. The reason why this presumption is well supported is because language – and contextual lingual specificities, such as figurative speech – creates and reinforces diversity and differences. Therefore the potential presence of language bias in the NEO-PI-R is actually emphasising socio-cultural disparities, and in doing so it is ultimately affecting the efficacy of a South African individual's score.

It was evident during the discussion that it may be plausible, if not entirely probable, that even when English is a common denominator moving from context to context, there is a loss of meaning. It is certainly possible that certain words, ideas and concepts could be misunderstood or misinterpreted precisely because of the contextual idiosyncrasies of the English language. Y1 concurs; *"I think it goes further than just words – I think sometimes your 'catch-phrases' in different parts of the world are very different; there were several in the questionnaire… actually there were quite a few that I actually had to look up cos there were some phrases that I just really wasn't familiar with at all"*. The notion of lingual essence is highly compatible with a deep understanding of a language and how it pertains to personality and the assessment thereof.

Language in context is richly laden with social and cultural intertextualities, and this is precisely the problem that we are encountering by using the NEO-PI-R in its current format. In raising this theme the participants suggest the assumption that the instrument would include all the 'richness' of American socio-cultural meanings. However, in doing so it cannot respond to the intertextualities of being South African, nor can it accommodate for the subtleties and differences in South African cognition and personality structure. Discussing this theme, Y2 noted that many words are loaded with socio-cultural meaning in a particular context, and therefore target a specific group of people; *"…certain things are understood as an essence, and not so much as a noun or a verb, like 'braai'. It's the people, the interaction, the procedure. Its so much more than a word and barbeque would never arouse the same feelings in me"*. It is not difficult to surmise that this effect – or loss of essence – exerts its influence upon many words, concepts or ideas within the NEO-PI-R. It is these items that may be thought of as problematic for South Africans, primarily because we don't have any collective experience of American culture to fully understand or appreciate certain American things. Succinctly, the participants concluded that some of the ideas or concepts in the NEO-PI-R would not have carried the emotional or cultural capital to arouse nostalgic, familiar or strong feelings about the statement, therefore disabling an accurate response from that participant. As Y1 notes, *"[words are] also attached to social and cultural elements. So when a South African sees a particular word – like braai for example – immediately, you have a million associations in your head about what that words means to you, and many of those ideas and understandings mean that that word is very context specific"*. Understanding arises from our pool of collective cultural experience and it

stems out of our social or learned expectations of words. Any word not belonging to this context-specific lexicon can arguably be rather inappropriate.

Importantly, what should be noted at this stage is the versatile nature of spoken English in South Africa. The present study's position is that this versatility is a direct translation of the socio-cultural changes that have underpinned our national progression. Ultimately, what one cannot ignore is that fact that we are a multilingual society, in which there are many dominant languages and therefore many cultural and lingual influences as well. A comment from X2 exemplifies this statement; *"I'm mainly exposed to speaking English when I'm [at Wits], but when I'm at home its just isiSotho. We only use English for words like 'because' or 'and so' and 'nice' like to jazz-up the sentence! I only really speak English to my brother cos I have to get him used to speaking English cos they don't speak it all the time at school. And I also speak isiXhosa sometimes because my Dad's family speak it. And when I pray, I pray in English, so it gets quite confusing sometimes…but seriously guys, English is something that is not coming naturally all the time, and I'm trying to get used to speaking English all the time because of my profession…and I try because my English is not perfect all the time. But I'm not so bad with understanding it as other people"*. In a multilingual society, the importance of highlighting socio-culturally items in an English medium test becomes increasingly important for multilingual individuals, such as X2. For example, the 16PF has undergone significant changes, improving the original version to a more culturally appropriate, standardised version for South Africans (Paunonen & Ashton, 1998).

In various research efforts on the 16PF carried out by Abrahams (1996, 2002; Abrahams & Mauer, 1999), it was clear that the assessment of finer details and less overt concepts of personality were being compromised through inappropriate lingual nuances, and profound meaning was being lost and misinterpreted across a language and cultural barrier. Abrahams (1996) went on to discuss that although personality structure can be similar across racial and lingual groups, recurrent differences do occur in certain domains and facets of personality structure. What this means is that these discrepancies may be attributed to socio-cultural and lingual specificities that contrast with the concepts contained in an unstandardised instrument. The same rationale is indisputably applied to this study of the NEO-PI-R. Participant X4

reflects on the her experience of being truly multilingual; *"South African English is a very adaptive language. I speak Zulu, and I have found so far, that the way I have learnt to speak English has been very adaptive to certain situations…and often mixed and mingled with Zulu, Sotho and Afrikaans, and everyone understands everyone"*.

The important aspects of X2 and X4's comments indicate the challenges that the majority of South Africans face when engaging with the English language in specific. The difference is that X2 would be considered to have an advantage over others, for whom English is a second language, primarily because she is attending an English university and benefiting from exposure to advanced English. Coincidently, the NEO-PI-R requires the use and comprehension of sophisticated English (Van der Vijver & Rothman, 2004). However, advanced English is by no means the same as spoken English. In the workplace for instance, one cannot assume that all individuals who are able to speak English, will be able to understand it on an advanced level, let alone be it as a second or third language. In many cases, "even when linguistic skills are not being assessed, the level of proficiency that is required to answer items of personality instruments is often quite advanced" (Van der Vijver & Rothmann, 2004, p5). Subsequently, the appropriateness of the NEO-PI-R may once again be called to question in the South African context, where multilingualism is the rule, rather than the exception. This evidence further supports the probable presence of language bias when using the NEO-PI-R in the South African context. However, language bias is not uncommon in multicultural studies. In most cases in which an instrument is administered in a language that is the second or third language of the participants, language bias is at the forefront of the critically confounded test scores (Van der Vijver & Rothman, 2004; McCrae & Terraccianno, 2005). This point being made, the NEO-PI-R may be recognised and accepted by South Africans, but what is not appropriate is to expect that the essence of the cultural specificities in the American English medium will be fully understood by all South Africans, despite our *glocalisation*.

Arguably, the main point of contention for these issues leads back to the issue of language, and that differences exist in the English language when the context is changed. This is precisely one of the proposed reasons as to why the NEO-PI-R may not be entirely appropriate for the South African context. Meanings are completely lost or changed when the socio-cultural context is

changed. Participant X5 comments that, *"...some of the words when used in the right context, to someone who understands it, are just so powerful. But if you're not familiar with that context, then you miss out on that meaning. You feel lost"*. This comment reinforces the impetus of language in the process of cognition and comprehension; although the NEO-PI-R does not test this skill per se, it is ultimately a skill that is required in order to be able to take the instrument for assessment purposes. This addresses the topic of using English as a second (or third) language; a common phenomenon in South Africa.

The problems associated with lost or changed meaning across a cultural context is well illustrated by Satz-Miracle (1981) in research using the Spanish language equivalent of the WISC (the EIN)[36] for a varied sample of Latin American, Spanish-speaking children. Her results indicate that the cross-cultural use of the EIN was highly problematic because it revealed that the differing linguistic nuances in Spanish across contexts, as well as the respective cultural and environmental heritages across contexts, were largely responsible for scoring discrepancies between those for whom the test had been intended (Puerto Rican Spanish-speakers), and those for whom the test was eventually used (other Latin American Spanish-speakers). Succinctly, the Spanish that would be fully understood and appropriate for Puerto Ricans was misinterpreted and inappropriate for the other South American cultures, even though they were Spanish-speaking nations. This indicates that the cultural influences upon language were certainly present.

On an everyday basis, many South Africans face a challenge; communicating in a language that is not a first language. The language to which I am referring is English. In South Africa, most psychometric instruments are available in English, and oftentimes Afrikaans as well[37] (Abrahams, 1996). However, the spoken-word of English is not necessarily related to the ability to reason and understand eloquently in English. Indeed, the many comprehensive difficulties with English as a second language are emphasised when encountering an instrument such as the NEO-PI-R, which embodies a high degree of eloquence in its instruction and response. X5 states, *"if its not your first language, maybe you would just be confused or maybe*

[36] Please refer to Chapter 3 for a deeper reading of Satz-Miracle's results
[37] Historically, research and financial resources were not dedicated to developing African languages instruments, rendering English or Afrikaans the most appropriate choice (Abrahams, 1996).

take a moment longer just to figure out the meanings, and maybe you just wouldn't understand". However, when another layer of complexity is added, the scenario becomes even more problematic. The additional layer of complexity is the socio-cultural nuances and influences. These complexities are carried in the language of the instrument.

The participants felt that it was not only the words of the instrument that reflected the American socio-cultural setting, but also the sentence structures and phraseology. How then, do we go about calling the appropriateness of certain items of NEO-PI-R into question? Succinctly, if one combines the two above-mentioned factors, with the fact that the NEO-PI-R contains sophisticated English, and with the knowledge that many South Africans speak English as a second language, one may find its appropriateness on certain items questionable. The NEO-PI-R is problematic because the use of advanced English vocabulary and sentence structures (constructed in the American context), is likely to create at the very least, hesitation or mild confusion for English-speakers, and definitely a barrier in interpretation for those using English as a second (or third) language. The following excerpt is taken from focus group one;

X2: *…I consider us lucky because we are studying and therefore we learn a lot of new words and complex meanings. But can you imagine giving this test to someone who hasn't studied, or to someone whose first language is not English. I don't think it would be an appropriate test at all. Those people wont know a thing*

X1: *Yes, definitely. So then for someone who maybe didn't finish school, or didn't have English as a language medium, or finished school but hasn't done any sort of continued education since then, the test would be, I mean, the understanding of the test for that person would be that much more difficult. Now I'm not saying that if you don't go to university you're stupid – of course not – what I'm saying is that you would not have had the advantage that we presumably do have, having achieved a honours and/or a university level of education.*

X3: *And that then affects the person's test scores. Ja, and I mean that opens the scores up to a 'helluva' lot of problems, especially here in South Africa. And I think that the test could be bias in that sense.*

Once again it is evident that the English language in the NEO-PI-R could be considered a confounding factor for many South Africans, over and above the fact that it is thoroughly influenced by the socio-cultural context out of which it is created. Furthermore, it is systematically laden with American figurative language and its phraseology is unfamiliar to

South Africans from a sentence structure perspective. At this point it may be clear to see the problematic layering effect that these factors are creating for South African test-takers, regardless of what their first, second or third language might be. For this same reason, this study considers the NEO-PI-R to be a somewhat controversial instrument to use widely, until such time as it is standardised or appropriately revised.

In keeping with the basic sentiments of theme three, Y4 offered a fresh perspective on what should be considered controversial; "*I'll give you a slightly different example…I majored in sign language and deaf culture, and what they do, is they test deaf people using written language. So lets assume that a deaf person signs in 'visual English', and is tested in written English. Now that's very controversial because it's not their first language; their first language is visual, even though it's English in both cases. So you're losing a whole lot of stuff; without visual cues, the deeper meaning of a sentence is lost. It's the same with the NEO…I think that sentiment carries over when we're talking about different forms of 'English' too"*. Y4 is supporting several of the study's main ideas; firstly that English differs slightly from one context to another; from written to verbal contexts; from country to country; from lexicon to lexicon. Secondly, that the use of culturally-loaded English is as inappropriate as it is controversial, and can therefore be considered a major source of language bias. Typically this type of bias may emerge if the instrument's instructions or test questions are ambiguous or unclear, and lead to aspects of the test itself being misunderstood (Poortinga & Van der Vijver, 1987), which is precisely the phenomenon that has been elaborated in the discussion above.

5.4 Specific problems relating to items on the NEO-PI-R

At this point the actual words and items that the focus group participants recalled to be inappropriate are introduced in Table 5.12. These words were significant enough to recall almost two weeks after completing the questionnaire. Of the 16 specific items that were recalled by the participants, 6 of those items represented the E domain. The facets that were commonly cited include Excitement-seeking, Positive attention and Gregarious. This is an interesting result, especially because Extraversion expresses sociable energetic and domineering character traits. Participant X3 made a good observation for the perceived prominence of the E

domain; "*I find that the Americans generally are quite confident people, you know, like quite 'out there' loud and clear. And a lot of the time, I felt like the words and questions were geared towards a confident person…Like some of the examples actually reminded me of what I think an American person would be like!"*. E has been identified at several points during the presents study's analysis as problematic for the South African user group.

Specific items in the NEO-PI-R perceived as inappropriate and/or difficult to understand			
Domain	**Facet**	**Item phrase**	**Frequency**
N	Vulnerability	Going to pieces (item 86)	9
N	Angry hostility	Hot-blooded (item 66)	3
E	Excitement-seeking	Las Vegas (item 52)	8
E	Excitement-seeking	Roller coasters (item 172)	5
E	Gregariousness	Going on vacation, cabin in the woods (item 157)	5
E	Positive attention	Bubbly behaviour (item 117)	4
E	Positive attention	Jumping for joy (item 27)	4
E	Excitement-seeking	The movies (item 112)	3
O	Ideas	Mind-twister games (item 143)	5
O	Actions	Going on vacation (item 198)	4
A	Tender-mindedness	Pan-handler (item 119)	10
A	Compliance	Hard-headed (item 199)	4
A	Tender-mindedness	Hard-headed (item 59)	4
C	Achievement-striving	Lackadaisical (item 20)	9
C	Order	Fastidious & exacting (item 160)	5
C	Dutifulness	Solitaire (item 105)	3

Table 5.12. – Problematic items identified by the Focus Groups

Firstly, the quantitative phase using ANOVA's at an item level showed that items evaluating E were significant, especially those assessing Excitement-seeking, Positive attention and Activity. Secondly, during the qualitative phase E emerged as problematic in several respects; the sample identified 26 items that they perceived as being inappropriate in the South African context and E emerged as the most problematic domain, and again, the facets of Positive attention, Excitement-seeking, Gregariousness and Activity were responsible for the result. Fundamentally it is plausible that the NEO-PI-R may not evaluate the E domain as well in a South African user group, as it can in an American user group. The question as to why this is so may be addressed as the phenomenon of cultural essence or nuance in language. The essences

or underlying meanings within words, ideas or concepts are culturally bound. Therefore one could surmise that the word essences and meaning nuances, for E facets for example, within the American version of the NEO-PI-R may not be appropriate for South Africans or by any other culture that is not American. In 2000 a study about national character conducted by Lester (cited in Gibson, McKelvie and DeMan, 2008), several countries were scrutinised in terms of their national cultures and characters, and ultimately the United States was classified by the layman sample as being stable (non-neurotic) and extraverted. This statement is ultimately indicating the layman presence of this typical American characteristic, and furthermore, its overt existence in an instrument such as the NEO-PI-R. Essentially X3 is indicating that even the words, sentences and meanings that are being communicated through the language medium of the test have an American feeling; the words and sentences have been perceived as being too 'American' and therefore not localised to South Africans.

A good deal of the participants felt that the problems were either with single words or with the meaning of a sentence; X2 reported, *"I did remember thinking that some words looked familiar, like I'd heard them before – seen them before – but they didn't really make sense for me in that sentence. Then you sort of like think "okay?" and then ja, you go to the dictionary!"* Many participants recounted feeling confused and at a loss for explanation because the order of the words in the sentence made little or no sense to them. Participant Y5 shared her perspective of this challenge; *"I grew up in a Xhosa home, but I went to an English school. So for me personally, I'm not perfect with English, but I understand it enough to be good. I think better than a person who grows up in an African home and goes to a location school, and who doesn't start speaking English seriously until they go to college or varsity. So for me, some words were like "whoa, okay" it was hard…So I think for anybody who regards their English as a second language, they would find it very, very difficult."*

An expansion to the specific definitions of problematic words in the NEO-PI-R is most necessary. Many of the participants gave similar accounts of struggling to understand words in the instrument, and subsequently reported having used a dictionary or thesaurus to assist their understanding; as X2 states, *"So I have been exposed to English for quite awhile now, even though I consider my English as something that I'm constantly improving on, but there were*

definitely words that I had no idea on." However, it must be pointed out that the participants – who are postgraduate university students – actually have a high standard of English elocution, and may be considered as fluent at the very least. Despite this, there were words both first- and second-language English speakers had difficulty understanding or recognising; the reasons for this being that the words themselves were foreign, and not because the participants did not understand the meaning. Participant X4 explains this point very well; "*There was quite a few words that I had to look-up in the Dictionary, and then I'd read what it meant and realise that I actually do recognise that meaning, but I use a different word for that meaning, like, I mean, I had never really used the test's word before, even though deep-down I did know what it meant"*. Most focus group participants agreed that they understood the meaning of the word perfectly once they had looked-up a more familiar synonym in the dictionary or thesaurus. Further, the analysis of the open-ended questions yielded support of this issue, where respondents found that it was not their English comprehension that was the problem, but rather the test's use of unfamiliar or foreign English terminology. This is a profound problem to have within a personality inventory in South Africa; to contain some words that arguably may be too foreign or overly sophisticated, and may therefore exclude certain test-takers from understanding the item. In South Africa where bilingualism and multilingualism is common amongst many people, it may be unreasonable to test for personality variables using a language medium that unfairly excludes those who may not be advanced English speakers. Importantly, it must be emphasised that anyone can have difficulty with overly sophisticated English, regardless of whether English is one's first language or not.

During the focus groups, 100% of the participants found item 119 to be inappropriate for the South African setting because of the word 'panhandler'. Participants felt that South Africans do not use that word; Y3 explains his experience; *"'pan-handler' - I actually had to look it up in the dictionary cos at first I thought "what? Are they talking about a property or a chef or what?" but then I found that in fact it's like a beggar"*. The items that were identified as qualitatively problematic[38] indicate that 25 out of the 28 participants had difficulty with this item. Of those 25 participants, 21 of them did not understand the item as a result of the foreign word, which was the subject of the sentence, and the remaining 4 found that the item was

[38] Refer to Table 5.5

inappropriate in the South African context because the word was unfamiliar and uncommon, and was culturally specific to the American English lexicon. Item 20 contains the word 'lackadaisical', which was another problematic word for the participants in this study. Participant Y1 mentioned; *"'lackadaisical' I think I know what it means, but its kind-of too American. I don't know if I've ever actually heard anybody using that word"*.

In speaking about the use of the word, Y1 and the other members of focus group two went on to discuss its seemingly ambiguous meaning in the sentence. Ambiguity of words in a sentence was a complaint and critique that arose out of the open-ended responses as well as the focus group discussions. Y4 reported feeling confused because of the ambiguity of 'lackadaisical' in item 20; *"it didn't seem as though it fitted in that sentence. The way that I understand it is that it means lazy and sort of clumsy about responsibilities and things, and there's a difference between that and 'easy-going'"*. The participants cited some other items and/or words that were found to embody the same sorts of difficulties, that is, words that were totally unfamiliar, or difficult to make sense of, or ambiguous in their meaning. Such examples include 'going to pieces' in item 86; 'mind-twister games' in item 143; 'hot-blooded' in item 66; 'fastidious and exacting' in item 160; bubbly behaviour in item 117; 'solitaire' in item 105 and 'hard-headed in item 59 and item 199.

One of the influential factors acting upon a test-taker's level of comprehension and meaning-making is the socio-cultural context. In the case of this study it would be the South African context that is conflicting with the American context of the NEO-PI-R. The participants found that they experienced three problems whilst completing the NEO-PI-R, which seemed to be related to the context that they were in. Firstly, as already discussed, the instrument contained several sentences with unfamiliar sentence structures according to the way that South Africans think and speak; the participants reported that the sentences resembled the way an American would phrase a sentence. Secondly there were some words that seemed familiar, but didn't make sense in the sentence due to ambiguity or confusing sentence structuring; the item's meanings became lost or misdirected upon South African users. Finally, the participants reported that some items were out of context for South Africans because of the subject or nuances within the sentence itself. For instance, X5 commented, *"…there were some questions*

that related to the weather or the um, like the landscape, that didn't really grasp a meaning for me? I could only really imagine because of what I've seen on TV, but then you feel as if you put down a false sort of answer, because it's not really a fact".

This sentiment was shared by the other focus group participants, and was found to be one of the main sources of inappropriateness and inapplicability of the NEO-PI-R; that is, the fact that the test makes reference to specific American things, places or climates, which are not culturally or geographically appropriate for South Africans. As X4 has mentioned previously, many South Africans that would be answering these types of items in the NEO-PI-R would be giving imaginary responses, and in doing so, creating inaccurate information about their personality; "*they may be answering things that they have never seen or experienced, but that they have seen or heard about on TV. So that's not first-hand information about their personality. Like asking someone from the location about a forest or scuba diving or something! It isn't applicable"*.
The following excerpt from focus group one is indicative of these shared feelings amongst the participant group as a whole;

X2: *Well I tried so hard not rely on the dictionary, because I know that in a formal test like the NEO you cant use one. But I must say that it was quite hard at times! What I really didn't enjoy, was not understanding a word or a question, cos then I had to answer 'neutral' for those ones. And I didn't like that because I felt that if I understood the words, I would have given you the appropriate answers*

X4: *Ja it was the…same thing for me. I actually felt quite stupid with some of the questions, because it seemed as if I should have had an opinion – like agree or disagree – but I didn't because I wasn't sure of the idea behind the question.*

The South African cultural context is – as has been established by now – a setting of complete uniqueness, diversity and complexity, which perhaps only a South African could fathom. Sociologically, South Africans are very similar to other East African cultures, which are regarded as collectivist cultures (Vogt, 2009). In addition, these collectivist inclinations are spliced with globalisation, and create a unique paradigm of modern South African culture. Essentially, this is the confluence of indigenous and western culture; the intersection of traditionalism and modernism. Idiosyncrasies in the ways we speak, think and behave have created an especially textured socio-cultural blanket, under which many South Africanisms lie.

The context of the ways in which we express these South Africanisms is all-important. As Y5 explains, the contextual influences that act upon words and meanings will influence the way in which they are understood; "*There are times when I often use words…I think like colloquially, but they mean something else in the dictionary…but it also goes according to different cultures as well – how you understand something because of the language that you use. So understanding also becomes based on what culture you come from… and I think this maybe links to what we were saying about different meanings of words in different contexts…cos in the African cultures sometimes what matters more than the words is the context and who you're speaking to. That's why I had problems with the test"*. If we apply our critical thinking towards the NEO-PI-R, bearing these concepts in mind may indicate that the instrument may not accommodate this level of socio-cultural appropriateness. From the researcher's perspective, what immediately comes to mind are the many South African words (South Africanisms), which are unique to our context, our people and our understanding of each other, and these words define the way we think and communicate. For instance, what makes South African English different to American English is in asking for 'the bill' instead of 'the cheque' or going to 'the toilet' instead of 'the restroom', and perhaps when someone else 'looks smart' in an outfit, it does not mean that they look clever.

A nuance in language certainly is specific to its context. Despite the fact that the NEO-PI-R is administered in English, there are very fine distinctions that appear to be creating quite some difficulty for the South African context, only because the instrument does not cater specifically for a multicultural South African audience. Participant X3 indicated one of these fine distinctions. She pointed out that South Africanisms in words, or our meanings for words, seem to be more sweeping in their fundamental nature; "*I find that South African English is much more relaxed and generalised"*. In critiquing the NEO-PI-R one may become aware of the fact that American English is much more specific. For example[39], when an American speaks about doing something 'a couple of times' he/she literally means twice, and 'a few times' literally means three times; whereas when a South African says 'I'll do it just now' or 'now-now' we do

[39] Dee Ross Franklin (DRF) spent 18 months living in the United States, while writing-up the M.A. dissertation that constitutes the present study. This invaluable experience added depth and insight into the qualitative analysis and evaluation of the results. In the text above, are just a few of the South Africanisms that are unique to our people. In such, these literal and figurative meanings of our localised South African English, do not translate well in the United States; in fact, DRF's personal experience is that these differences make being understood difficult at times

not literally mean in that moment, and like wise for the other two examples. This type of flexibility in our lingual characteristics certainly matches well with descriptions of the South African personality earlier in this chapter; relaxed, adaptable, flexible. Similarly, the concretised and exacting nature of the American English in the NEO-PI-R did not go unnoticed by the participants. South Africans have unique colloquialisms, which Americans do not share, and vice-versa; for example, a question that is a 'no-brainer' does not mean a silly question, and rather means that the answer is an easy one. What cannot be considered appropriate is to use an instrument such as the NEO-PI-R when it contains the sort of cultural specifics that may be misunderstood or not understood at all by the user group. This could drastically affect the test scores. At this point it seems more apparent that it is not only the figurative use of the English language that is different, but also the 'flavour' and composition of South African English.

Essentially, the present study proposes that these themes and discussions are not uncommon to South African psychologists. The NEO-PI-R's appropriateness and applicability has been questioned since its introduction into this context (Heaven, Connor & Stones, 1994; Heaven & Pretorius, 1998; Van Eeden & Prinsloo, 1997). Arguably, the NEO-PI-R has been a successful instrument for some South Africans, however this cannot be the case for all. In many instances one can argue that it has been long considered the 'best case scenario' simply because we did not have a more appropriate instrument. It is very much a case of there being limited resources, both financially and professionally, engaging a community with high needs. However, the current urgency and the abundance of local research that has been conducted on the NEO-PI-R indicates the need to devote resources into revising certain items in order to produce a lingually and culturally appropriate revision to the NEO-PI-R (Heaven & Pretorius, 1998; Heuchert, Parker, Stumpf & Myburg, 2000; McCrae & Costa, 1997; McCrae & Terraccianno, 2005; Piedmont, Bain, McCrae & Costa, 2002; Prinsloo & Ebersöhn, 2002; Van Eeden & Prinsloo, 1997; Wallis & Birt, 2003).

5.5 Integrative discussion of the results

According to Claasen (1997), psychological testing in South Africa cannot be separated from the country's socio-cultural, political and economic history, as well as its current socio-cultural,

political and economic climate. Naturally then, the underlying principles of a South African personality should come out of, according to participant Y2, the contextual and environmental impacts of our local setting. This concept of personality in the South African context includes variables such as culture and home language, and all the influences that are an adjunct to these variables, which have been the foci of the present study. By this rationale, a South African personality shall be inimitable, with cultural specificities, nuances in meaning and unique adaptations to language. To this observation it seems clear that to assess South Africans by any measure other than those that have been standardised for multicultural South African users, would be beleaguering the test results with numerous forms of bias. As early as 1943, in his book *African Intelligence*, Biesheuvel (cited in Meiring, 2007) had started questioning the appropriateness of using unstandardised tests in South Africa, because they highlighted the same sorts of influences that Claasen (1997) pointed out fifty-four years later. The present study has harnessed these sentiments once more, and reinforces the need to revise Westernised instruments for a South African user group. Hence, the following integrative discussion of the results, aims to tie-up the complex network of threads from both the quantitative and qualitative phases that were presented. Using a well-versed research methodology in the likeness of Abrahams' (1996, 2002) continued research on the 16PF, the present study has arguably identified language bias in the NEO-PI-R.

In this study, English speakers were distinguished from non-English speakers by using 1st language, or 'home language', as a marker towards performances (quantitatively) and evaluations (qualitatively) of the NEO-PI-R. The goal has been to identify the evidence and potential sources of language bias in the NEO-PI-R. The inventory was administered and evaluated in English within the South African setting, and what became apparent, was that many of the participants were not only multilingual, but also fluent in two or more languages; a common occurrence amongst South Africans. In fact, focus group participant X2 considers herself fluent in four languages and conversational in an additional two, and believes that there are many South Africans who share this status. The question that remains to be answered is how well and how appropriately the multicultural and multilingual South African society can respond to a psychometric instrument that was developed outside of the local setting. The

NEO-PI-R is essentially the type of instrument that is currently being used for South Africans even though it has not been standardised for this user group.

The students who comprised the user group in the present study represent an urbanised, high functioning sample that has had educational opportunities exposing them to advanced usage of the English language. In addition, being part of a modernised university community has ensured a degree of westernisation. The postgraduates were used because it was hoped that they would have the best possible understanding of the NEO-PI-R in its current format. Indeed, the students reportedly consider themselves skilled in the English language and expected to be able to comfortably complete the instrument. For this reason, it is perhaps not surprising that the *macro*analysis[40] of the domain scales (using One-way ANOVA's) show that there are no domains that emerged as being problematic, with all P-values being non-significant at a 95% confidence level. One can therefore deduct that the domains are accessible to a multicultural sample of South African university students. The reason as to why this is so, is precisely because they are an postgraduate educated group representing advanced and complex skill in English elocution. However, it may be assumed that a randomised sample of South Africans may yield more significant results; that is to say that a random sample drawn from the South African population would more accurately represent the nation demographically and economically, and may be expected to yield far less robusticity in the scaled scores than the students did. Succinctly, one could generalise by expecting that the general population may not fair as well as post-graduate university students would. This would then indicate that the lay-population would experience more difficulty in understanding and completing the NEO-PI-R than the student body would.

Regardless of the educated user-group of this study, the participants definitely experienced quite some difficulty based on the fact that some items were obscured by the use of words from the American English lexicon. The results indicate that 14% of the items showed that an individual's home-language influences the ability to understand certain items of the NEO-PI-R. At a 5% level of significance, N and E were problematic domains. At a facet level, Impulsiveness (N) and Deliberation (C) were the most problematic facets, indicating that items

[40] Refer to the explanation of *macro*analysis in earlier chapters

evaluating these facets were the most challenging or awkward items for the participants. At a 10% level of significance, N was once again a problematic domain and A was not problematic. At a facet level, Anxiety (N), Depression (N), Self Consciousness (N), Activity (E), Aesthetics (O), Feelings (O) and Competence (C) emerged as the most concerning facets. During the qualitative analysis the participants did not describe a South African personality as tense, neurotic or vulnerable, and instead were inclined to describe a more agreeable and flexible nature, therefore veering towards A (and O) and away from N. Furthermore, the participants identified that there was an overt presence of E in the way that many sentences were constructed. E facets were also commonly identified as problematic, and include Excitement-seeking, Positive attention, Gregarious and Activity. Many participants did not identify with the high levels of energy, conviviality and gusto that were communicated through the language in some items. Combined, these results show that the N and E domains are poorly represented in a South African user group because they were slightly problematic domains and yielded problematic facets and items. Conversely, Agreeableness was not problematic in this way, and therefore had the least problematic facets and items.

Interestingly, in a National Character Survey by Terraccianno, Costa and McCrae (2005) Lester's initial research was extended by using (in alphabetical order) Austria, Burkina Faso, Canada, Indonesia, Japan, New Zealand Nigeria, Philippines, Poland, Turkey and the United States. The authors found that the countries differed on perceived neuroticism but not on measured neuroticism. Furthermore Terraccianno et al. (2005) obtained similar results for Extraversion, Openness to Experience, Conscientiousness and Agreeableness. This finding is astounding in light of the combination of the qualitative and quantitative results in this study; that perceived and measured domain scales can yield different results. Essentially, it is pointing to the ways in which language bias was measured quantitatively and qualitatively, and suggesting that language bias may be a construct that is best identified qualitatively. In doing so, this proposition may be an explanation towards the differences observed between the quantitative and qualitative results in the present study, namely that N and E were slightly problematic from a quantitative perspective. However, E and A were clearly slightly more problematic from a qualitative perspective. From the qualitative analysis it appears that the participants rarely acknowledged N. When exploring the nature of a South African personality,

participants describe more A and O constructs, and no N constructs. Therefore although they did not find the concepts or words associated with N items to be problematic, they did not feel that the domain was representing the South African personality in the best possible manner. The participants did, however, experience difficulty with words and concepts from E and A items (and to a lesser degree C) meaning that these domains were problematic from a qualitative perspective. This result was analysed further and indicated that E and A were problematic for different reasons. E was problematic from a trait perspective, meaning that the sample perceived levels of extraversion that were too high for a South African user group, and A was problematic from a language perspective, meaning that the words and meanings of theses items were generally too advanced or out of the South African socio-cultural context. The E domain has proved to be problematic in other studies as well. Piedmont et al., (2002) found that E scores in a Shona sample were lower than the American norm. However, low E scores (particularly low Gregariousness) were inappropriate constructs for Shona culture, and usually indicated psychological illness from this local perspective. Therefore it was problematic to find items that would reflect low E without also reflecting high N. Like the South African user group, N and E were inappropriate representations of the locally cultured personality, and were subsequently weakly replicated domains in the study. In order to assess the presence of language bias in the NEO-PI-R, perhaps the most efficacious method yielding the most detailed results, may be to assess language bias qualitatively (Abrahams & Mauer, 1999). This statement suggests that the qualitative results are guided by local perspectives, and based upon culturally situated perceptions and systems of meaning. It is only from this point on, that culturally appropriate revisions to the instrument may be considered. In ongoing research efforts by Abrahams (1996, 2002; Abrahams & Mauer, 1999) it is clear that the assessment of personality is compromised through the inappropriate lingual nuances of imported personality inventories. Revision of such inventories could prevent word and sentence meanings from lost and misinterpreted across a language and cultural barrier. As participant X5 states, *"I think in the same way that [isiSotho] meaning is lost in the English language, so too are some meanings lost to South Africans when we bring them in from an American context"*

Language bias occurs when score differences in the indicators of a particular construct do not correspond with the differences in the underlying trait (Van der Vijver & Tanzer, 1997). In this

study we may think of the indicators in the NEO-PI-R as the words, meanings or concepts within the actual test items. The reason why these indicators are believed to be problematic and a firm source of language bias in the NEO-PI-R, is because at the root of the items is language; Americanised English to be more specific. As has been elaborately established, South African English is unique in that it has distinguishing lingual and grammatical idiosyncrasies. It does not find expression in the same ways that Americanised English does. Besides the presence of a unique accent, South Africans have a unique way of speaking with unique literal and figurative phraseology and is decidedly different from other English-speaking nations. The participants felt that one of the defining landmarks of South African English is the way that sentences are structured in comparison to other English-speaking nations, such as the United States. In many instances, the grammatical or sentence structure of many an item in the NEO-PI-R was a confusing and confounding obstacle inhibiting the participants from fully understanding the items. The responses from the open-ended questionnaire showed; "*…making sense of the words' full meanings in the sentence was a bit problematic at times"* (P9) and *"sometimes the way the questions were asked was a little bit strange, and I felt confused…a lot of the time the statement itself was completely foreign to me"* (P4). Ambiguity of words in a sentence was also problematic in addition to sentence structure. The underlying sentiment on this point is that many words do not seem to fit into their sentences in a sensible and comprehensive manner for the participants.

Berry, Poortinga and Pandey (1997) purport that culturally sensitive assessment is the systematic study of the relationships between the cultural context and the human development of traits and behaviours, which become established and nuanced in the socio-cultural repertoire of people living in a particular context. What this statement is alluding to is that culture makes people different. It makes their personalities or national identities seem unique too. The present study has endeavoured to establish the inseparable relationship between language and culture, and therefore veer towards the suggestion that certain items of the NEO-PI-R may be a socio-cultural and lingual mismatch for multicultural South African user groups. A number of items in the NEO-PI-R are not applicable for South African users because these items make reference to specific American things, places or climates. These are not culturally or geographically appropriate for South Africans. As participant X1 stated, *"…we are an*

incredibly diverse nation…I can barely think of another place in the world that recognises so many languages, that has so many differing cultural roots…and also such an influential history on the way we interact as people, since the apartheid was abolished. And all of these factors are so influential on our lives, and cant be compared or even paralleled to any other country".

In the present study the qualitative proposal is that although the NEO-PI-R is widely considered to be suitable for a South African user group, there are in fact some items that are inappropriate. Based upon this proposal it is evident that language bias is present in some items because the indicators of the NEO-PI-R conflict with the socio-cultural and lingual situatedness of the South African user group. The specific markers of language bias would be a) ambiguity in the sentence meaning, b) contextually inappropriate words or concepts, c) confusing sentence structures, d) Americanised figurative English, and e) words from the American English lexicon (e.g. pan-handler), which were identified as uncommon or foreign in the South African English lexicon. During the completion of the NEO-PIR, it is suggested that these sources of bias caused some confusion and despondence in the general response sets of the participants. The qualitative results show that a fair number of words, ideas and concepts in several of the test items are being misunderstood and misinterpreted from a socio-cultural perspective, and are therefore inappropriate in the South African context.

Bilingualism and multilingualism was found to be present in 29% of the study's overall sample, and was evident in 40% of the focus group participants. The concept of being fluent and proficient in more than one language is important for this study because of the main variable under assessment; that is language bias. The NEO-PI-R is administered in advanced English, and for this reason the present study required participants to be fluent and proficient in English. As is the case with many self-report personality inventories, the advanced level of language and abstract systems of meaning, as well as American cultural nuances inherent in the NEO-PI-R may not be understood by many South Africans, and it may be received as inappropriate, confusing or ill-fitting. Under these circumstances it is difficult to imagine how a multicultural South African user group, would be at an advantage on any more than the occasional item, even before a cultural or language barrier is considered (Poortinga & Van de Vijver, 1987).

Advanced and abstract use of the English language is perhaps one trait that most personality inventories share. However, in a multicultural climate that is flanked by multilingualism, diverse culture and uneven educational opportunities, one may begin to question the value of assessing personality through the mechanism of verbal fluency, advanced comprehension and arguably regal eloquence as well. It is certain that personality inventories have a long history of employing lingual sophistication in the assessment, not actually assessing that skill directly. In fact, personality inventories should not assess this skill at all, especially in South Africa where the condition of multilingualism is the normal standard for the vast majority of people. What this study challenges from a language bias perspective, is the purpose of using overly sophisticated English to assess personality. Essentially, it seems more sensible to use language from the South African English lexicon that both assesses personality constructs successfully, but is also accessible to the majority of South Africans.

According to Hayashi (cited in Gibson, McKelvie and DeMan, 2008), collective cultural values and systems of belief in a country are socially communicated and influence the expression of personality through behaviour. Together with the ideas on bilingualism, this concept is well illustrated by Gill and Hodgkinson (2007); the authors argued that when bilingual individuals operate in one of their languages, the language itself cues a preconditioned set of values, attitudes and personality characteristics that induce a corresponding expression through behaviour. Subsequently, Gill and Hodgkinson (2007) conducted a study using Big Five Inventory on individuals who were fluent in both Spanish and English, in which these individuals were required to complete the instrument in both languages. The results showed that the scores on each trait were different from one language to the other. This supports two of the primary claims during the discussion of the results, which suggest that meaning shifts, changes flavour or is lost across a cultural and lingual barrier, and that personality finds unique expression through different cultural hazes. The present study suggests that both are unquestionably present in the results of the present study.

Hofstede and McCrae (cited in Gibson, McKelvie and DeMan, 2008) point out that there are four serious threats to the applicability of cross-cultural results based on self-report personality inventories, such as the NEO-PI-R: a) the basic structure of personality traits may vary from one

culture to another, b) the presence of culturally inappropriate terms may pose difficulty in the test, c) response biases such as acquiescence and faking may vary across cultures, d) non-probability samples may not properly represent the populations. The potential research scope of these four threats is enormous, and understandably this study has focused on one; the presence of culturally inappropriate terms that create difficulty in the test. Language bias could potentially be the problematic factor of the using NEO-PI-R in the South African context, firstly because it automatically embodies actual words, phrases and figures of speech as being inappropriate, and secondly because it includes inapplicable socio-cultural references through the vehicle of language.

Perhaps the critique that can be raised against the NEO-PI-R by this study is that the instrument may be too americanised for a South African user-group, both from a language perspective as well as a socio-cultural perspective. In this way, the present study considers several items from the instrument to be biased, evidencing a presence of language bias. For this reason, the instrument itself cannot be fairly used on a multicultural South African user group (Heuchert, Parker, Stumpf & Myburg, 2000; Heaven, Connors & Stones, 1994; Horn; 2000; Laher, 2008; Prinsloo & Ebersöhn, 2002; Taylor & Boeyens, 1991; Wallis & Birt, 2003). According to the available literature (Abrahams, 1996; Heaven & Pretorius, 1998; Horn, 2000; Laher, 2008; Meiring, 2007; Piedmont, Bain, McCrae & Costa, 2002; Van der Vijver & Rothman, 2004), an individual's home language and their English proficiency impacts upon the responses to a psychometric instrument such as the NEO-PI-R. Significantly so in the South African context, extending research on language bias in the NEO-PI-R may offer an opportunity to examine how personality traits are developed and expressed through language and cultural systems of meaning. The motivation for language bias as a concept is supported by quantitative and qualitative analysis of this study. The essential suggestion is that the NEO-PI-R does require revision, just as its imported counterparts have, and that the revisions are not expected to be trivial.

6

Limitations, Recommendations and Conclusions

6.1 Introduction

The present study set out to identify whether there are any elements of language bias in the NEO-PI-R for a sample of South African postgraduate university students. In the light of the evidence obtained alongside available literature, it has become apparent that several issues complicate the use of Westernized theories and instruments in non-Western communities (Cheung et al., 2008), and that language bias is one. Van de Vijver and Rothman (2004) as well as Meiring (2007) have pointed out that the research on cultural applicability of imported personality instruments in South Africa is gaining momentum. The present study is but one research initiative in this growing trend, and purports to have found evidence of language bias in some items of the NEO-PI-R.

6.2 Limitations

6.2.1 Conceptual limitations

The primary conceptual limitation is the ongoing question of how best to assess language bias in a personality inventory such as the NEO-PI-R. To this end, a tentative suggestion can be made. There are several major theoretical problems that surround this question. The first would be whether or not the FFM is an appropriate theoretical foundation for an inventory that assesses personality amongst all South Africans. If it is not entirely appropriate, as previous studies have suggested (Heuchert, Parker, Stumpf & Myburg, 2000; Heaven, Connors & Stones, 1994; Horn; 2000), then it seems logical that numerous drawbacks would arise from this problem. One potential drawback would be that user groups may interpret some personality

constructs differently because of the influence that cultural and contextualised language has upon their cognitive processes. However, when using the inappropriate theoretical foundations, the user's alternate channels of meaning-making may translate into problems with understanding the language in the inventory. In this study of the NEO-PI-R, the possibility that the FFM is not entirely appropriate for all South Africans is a possibility that cannot be ignored. Subsequently, the study's evidence of language bias in the NEO-PI-R may actually point to another deep-seated notional problem with the theoretical foundations of the inventory.

The second theoretical problem that surrounds the question of assessing language bias in the NEO-PI-R bridges the gap between conceptual and methodological limitations. During the literature review it became certain that the most effective means with which to address language bias in the NEO-PI-R was by employing both quantitative and qualitative methods. While this strategy was an appropriate and successful process for the data, the most overwhelming evidence of language bias arose from the qualitative analysis. It may have been more beneficial to this study's overall conclusions, to have better or more concrete results quantitatively. The primary reason for this limitation is due largely to the several methodological limitations that follow, and significantly regarding the sampling.

6.2.2 Methodological limitations

The first limitation from a methodological perspective was the small sample size of this study. The students were part of a non-probability convenience sample consisting of volunteers from a postgraduate psychology class. The population was specifically chosen in order to keep the effects of English proficiency and test wiseness at an even, predictable level, therefore minimising their nuisance interference in the student sample and being able to assume relative homogeneity in the group. However, having a small sample size comes with inevitable limits, and these have to be discussed. Over the past decade, some research has been conducted on inventories such as the 16PF and the SA92 (Abrahams, 1996; Heuchert, Parker, Stumpf & Myburg, 2000; Laher, 2008); in many cases the contemporary trends show that students are often used, and that they represent a homogenous group, especially for research that addresses issues of bias and appropriateness of psychometric instruments. In these cases, where the

constructs under study are sensitive to the composition of the sample, the relative homogeneity of a student group ensures a degree of reliability in the test scores. If one reviews the results from the reliability analysis, this assumption is somewhat ratified. The analysis revealed that the domain scales performed well, yielding generally high reliability with high Cronbach alpha (α) values ranging between 0.62 and 0.91, with a mean alpha of 0.84. Neuroticism and Conscientiousness were the two most robust domains with high Cronbach alpha values of 0.91 each, and also exhibited this relative strength in their respective facets. Agreeableness emerged as the least reliable domain with a comparatively weak Cronbach alpha of 0.62, and exhibited instability amongst its facets. However, overall the results support the claim that the student group provided a stable and homogenous sample, and therefore provided a good degree of reliability and therefore internal consistency for the instrument under study for language bias.

The study is sensitive to the composition of the sample. Owing to the fact that the instrument is administered in English, it makes sense to sample from the University of the Witwatersrand (or any other English University) because the sample should comprise of individuals who are proficient in the English language. Furthermore, the way that English speakers were distinguished from non-English speakers was in terms of English proficiency, based on whether English was a first language. Ultimately, the question arises as to why this was so. Based upon the above motivation, the postgraduate psychology students enabled the researcher to identify a 'best-case' scenario with regards to understanding the NEO-PI-R's advanced English. Therefore the first limit is that the sample of postgraduate university students did not accurately represent the South African nation socio-economically or demographically, even though it was somewhat varied and did exhibit a small range in these parameters. However, the researcher was prepared to forego attending to this sampling threshold in order to test for language bias by using a 'best case' scenario to represent the South African nation. The outcomes of dealing with this limitation are, no, the sample was not demographically representative, but yes, this high functioning sample did show evidence of language bias in the NEO-PI-R. Therefore, the valuable point of this limitation is that a sample that represents the greater South African community, both demographically and socio-economically, may yield more concretised and convincing results.

During the discussion of the conceptual limitations it was suggested that the foundations of the FFM in the NEO-PI-R might be problematic for a multicultural South African user group. Previous research has shown that the five factors did not replicate as well amongst black individuals as it did amongst white individuals (Heuchert, Parker, Stumpf & Myburg, 2000; Heaven, Connors & Stones, 1994; Horn; 2000). Therefore the ongoing methodological limitation on this topic would be that the sample did not consist of enough demographic variation to support or contest these claims. This is primarily due to the small sample size and the fact that the sample was a relatively homogenous group of postgraduate students from one university.

The second methodological limitation also deals with the sample, although the effects of this limit remain unaddressed in the present study; 89% of the sample was female. While this is very much an accurate demographic of the post-graduate psychology population, it does not represent the South African nation at all. In a discussion on cross-cultural theory and research on personality amongst different sub-cultures in Canada, Gibson, McKelvie and DeMan (2008) found that the replication of domains C and A was generally better in females than in their male counterparts. Although this parameter was not attended to nor considered in the present study, it is worth noting here because there was a majority of female responses in the results. Further research into the NEO-PI-R is required to determine whether South African males and females would differ in their expression of the FFM of personality or specific domains of the NEO-PI-R.

Finally, the last methodological limitation arose during the data analysis. The present study analysed the variable of home language and how it affected the NEO-PI-R scale scores and items results. It is worth noting that the use of additional methods may have been useful to the results of the study. Mainly, this may have shown an interaction effect between the quantitative and qualitative results, therefore providing further evidence of language bias in the quantitative results, and in doing so would support the qualitative results. The proposed methods – assumedly chi-square analysis – would include an analysis from four perspectives; a) language and understanding the NEO-PI-R scales, b) language and understanding the NEO-PI-R items, c) language and appropriateness of the NEO-PI-R scales, and d) language and appropriateness of the NEO-PI-R items. It is suggested that these additional analyses may have been of some

value to further support and strengthen the claims made herein, despite the fact that they did not comprise part of the overall data analysis.

Although there have been a plentiful number of noteworthy advances in recent years in the assessment of personality, existing self-report instruments are beset with potential problems, especially when they are utilised in non-Western communities without socio-cultural revisions (Gill & Hodgkinson, 2007). When one considers this statement alongside the current usage of the NEO-PI-R in the multicultural South African context, the most concerning factor is that a number of the items are generic in character, as opposed to being culturally relevant for South Africans, and are therefore couched in idiosyncratic language and cultural specificities from the American context. This form of the English language makes the meanings of words, concepts and ideas in many items unclear to non-American users, such as South Africans. Therefore the first conceptual limitation is that the NEO-PI-R evidently consists of language that is not appropriate for the South African context, despite its ongoing utilization. The limitation of using the NEO-PI-R in the South African context involves the use and requirement of advanced English skill and comprehension. Many inventories such as the NEO-PI-R demand a high level of reading and comprehension skill and ability, and are therefore inaccessible to individuals who hail from low socio-economic backgrounds, where poor educational attainment and an absence of opportunity is the rule rather than the exception. In addition, many South Africans use English as a second or third language, and this challenge was elaborated upon during the last chapter. As a conceptual limitation, not being able to fully understand the language medium of the instrument is a sizeable undertaking for test users, and can potentially hinder the appropriate and reliable usage of the test and scores as a whole. This was well evidenced in this study using post-graduate university students.

6.3 Recommendations for future research

Professionals in the field of psychology (researchers and practitioners alike) require instruments that are relatively easy to administer and can be readily completed by individuals from the widest socio-cultural and socio-economic groupings as well as the widest range of ability levels. Such instruments should be unbiased and fair and should maintain robust psychometric

properties. In order to create instruments that are contextually and psychometrically reliable and valid, much revision is required to the original standardised version. In the case of the NEO-PI-R, the goal of South African psychological research should be no different; the NEO-PI-R is currently in use, albeit as an unstandardised instrument for South African users. Perhaps the overarching recommendation for further research would be to begin working more vigorously towards creating a standardised version of the NEO-PI-R for use in South Africa. As previously mentioned, the present study is one amongst very few other studies that deal with the biases and cultural-contextual inadequacies of the NEO-PI-R in its current format. According to Gill and Hodgkinson (2007), cross-cultural studies exploring the specific aspects of 'national' personality, enables psychology to better understand how to accommodate all natives of that nation in the testing environment, and also develop a reliable and valid instrument. By that rationale, the following recommendation for future research is to endeavour to identify and define the socio-cultural specificities of South Africans, by doing research on what the national character embodies. Throughout the literature review, it was evident that there have been few research efforts investigating these constructs. The palpable problem, I believe, is where and how to direct a research focus into national identity within such a diverse nation. It certainly is a challenge, but an important one nonetheless. The advantage of doing this type of research is that it enables psychology to respond more accurately to South Africans in a testing environment. One of the requirements for a good study on national character using personality inventories is that the sample of respondents must be acutely representative of the greater population. Also the need to create a sharper image of *latent culture* and the ways in which this distinguishes one group of people from another. What is implied by this is that as South Africans, we are absolutely different to other people in other countries, and that the psychometric inventories that we use should reflect these specificities and cater uniquely for our collective culture.

In terms of this study specifically, it is the researcher's suggestion that language bias is in fact present in specific words, concepts and ideas within the NEO-PI-R, because it reflects an American socio-cultural and lingual milieu. Therefore a specific recommendation to further this study would be to concretise these assumptions by using a non-student sample selected at random from the general South African population. In doing so, the study sample would

represent a randomised selection of individuals from a multicultural, multilingual background of ranging socio-economic status. The intention of revising the sample methodology would be that it would reflect interesting results; similar to the results herein, only more demographically appropriate, and more profound with the evidence of language bias.

The final recommendation for future research would be to consider lingually and culturally appropriate revisions to NEO-PI-R so that it can be appropriately used. As evidenced throughout the results and discussion of the present study, there is quite some concern over the NEO-PI-R's appropriateness and applicability for South African users, primarily because the test was developed within a foreign socio-cultural setting and therefore the language medium of the test is not entirely apposite in the South African context. It is suggested that some words and concepts are ill-fitting and need to be revised. It is not believed that these revisions will be in any way trivial. Instead, it is believed that significant changes will have to be made to the language, sentence structure and some complete items in the NEO-PI-R if it is to be truly appropriate in the South African context. This will no doubt mean that many items will have to be modified, and some others removed. The intention of this study, is to contribute to these sorts of future research efforts, by providing a small sample of problematic items, which would assist future researchers in identifying more words or items for review, removal or restructuring.

6.4 Conclusion

Throughout the study, it has been suggested that personality theory in South Africa should now be feeling the urgency to investigate the possibilities and probabilities of language bias and the appropriateness of the FFM in imported instruments in more detail. The results may specify that a more comprehensive description of personality in the South African context needs to be included in future personality assessment models, as well as in the revisions to these models. In order to achieve this, certain provocative questions – which may be worth a dissertation on their own - need to be adequately explored from a psychological and anthropological perspective; 'What is the *feeling* of South African speech?' 'What is a *South African personality*?' 'What is the *national character* of South African peoples?' and furthered research into identifying how and why Western personality assessment instruments are inappropriate. Thus this research

seeks to intercept the available knowledge about personality assessment, culture and language, and apply it to a local setting. By doing so, the overarching aim has been to obtain a better understanding of the degree to which language and culture can affect psychometric scores, thereby identifying evidence of language bias. Ideally the present study will contribute towards the current body of knowledge that is striving towards revision of the NEO-PI-R.

Ultimately, the results of this study point to evidence of language bias in the NEO-PI-R, and subsequently identify particular aspects of the instrument that are problematic for the South African user group of this study. The principal support for language bias emerged from the qualitative phases of the research, underpinning the overt presence of American socio-cultural references within the use of language, grammar and context in the NEO-PI-R. In conclusion it must be stated that the NEO-PI-R may not be the most appropriate personality inventory for multicultural South Africans at present, despite its global success and reliability. As other nations have done, so should South Africa; use the sound theoretical foundations of the NEO-PI-R and work towards developing culturally appropriate revisions. Essentially, a point that must be emphasised is that the full impetus of language and the cultural context upon personality, is presently a question that can only be tentatively answered. A larger reservoir of cultural and lingual analysis and investigation is needed in order to make clearer the aspects of a South African personality, or personality types. Specifically in South Africa, there is a need to explore the national identity of the country's natives so that psychology can respond more accurately to the assessment to majorities and even minorities. There seems no better quest than to seek knowledge about our own people, to accommodate them better, to understand them deeper. In doing so, South African psychologists may be able to confirm which dimensions of the FFM replicate well or poorly, and why. Supporting this sentiment, Cheung et al. (2008) emphasise that by now personality psychology should be feeling a strong need to go beyond structural replication of the FFM, towards cross-cultural investigations of personality, behaviour and concepts of the self in different cultural contexts. What we can expect from this type of research is the emergence of a sharper representation of personality perspectives and socio-culturally congruent inventories.

Reference List

Abrahams, F. (1996). *The Cross-Cultural Comparability of the 16 Personality Factor Inventory (16PF).* Unpublished Doctoral Thesis. Pretoria: UNISA

Abrahams, F. (2002). The (un)fair usage of the 16PF (SA92) in South Africa: a response to C.H. Prinsloo and I. Ebersöhn. *South African Journal of Psychology, 32*, 58-61

Abrahams, F. & Mauer, K.F. (1999). Qualitative and statistical impacts of home language on responses to the items of the Sixteen Personality Factor Questionnaire (16PF) in South Africa. *South African Journal of Psychology, 29*, 76-86

Adendorff, R. (2002). Fanakalo; A pidgin in South Africa. *Language in South Africa.* Cape Town: Cambridge University Press

Allik, J. & McCrae, R.R. (2002). A Five-Factor Theory Perspective. In, R.R. McCrae & J. Allik (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Babbie, E. and Mouton, J. (2004). *The Practice of Social Research.* Cape Town: Oxford University Press

Bailey, D. (1997). *Research for the Health Professional*. (2nd Ed). Philadelphia: F.A. Davis Company

Berry, J.W., Poortinga, Y.P. & Pandey, J. (1997). Theory and Method. *Handbook of Cross-cultural Psychology: Volume 1*. Boston: Allyn & Bacon

Carroll, L. (1871). *Through the Looking Glass.* London: Penguin Publishers

Cheung, F.M., Cheung, S.F., Zhang, J., Leung, K., Leong, F. & Huiyeh, K. (2008). Relevance of Openness as a personality dimension in Chinese culture: aspects of its cultural relevance. *Journal of Cross-Cultural Psychology, 39*, 81-108

Cheung, F.M., Leung, K., Zhang, J.X., Sun, H.F., Gan, Y.Q., Song, W.Z. & Xie, D. (2001). Indigenous Chinese Personality Constructs: Is the Five-Factor Model Complete?. *Journal of Cross-Cultural Psychology,32*, 407-433

Church, A.T. & Katigbak, M.S. (2002). The Five-Factor Model in the Philippines. In, R.R. McCrae & J. Allik (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Claasen, N.C.W. (1997). Culture differences, politics and test bias in South Africa. *European Review of Applied Psychology, 47*, 297-307

Cooper, C.L. & Pervin, L.A. (1998). *Perosnality: Critical concepts in Psychology*. New York: Routledge

Costa, P.T. & McCrae, R.R. (1992). *Revised NEO Personality Inventory and NEO Five-factor Inventory Professional Manual*. Florida: Psychological Assessment Resources

Digman, J.M. & Inouye, J. (1986). Further specification of the five robust factors of personality. In, J.M. Digman. Personality structure: Emergence of the five-factor model. *Journal of Personality and Social Psychology, 73*, 1246-1256.

Editor in Chief. (2007). Contents page. *Journal of Cross-Cultural Psychology, 38*, 1. London: Sage Publications

Eriksen, T.H. (2001). *Small Places, Large Issues: An Introduction to Social and Cultural Anthropology*. (2nd Ed.). London: Pluto Press

Foxcroft, C. & Roodt, G. (2005). *An Introduction to Psychological Assessment in the South African Context*. (2nd Ed). Cape Town: Oxford University Press

Freud, S. (2003). *Beyond the Pleasure Principle*. Penguin Modern Classics Series. Rosebank: Penguin Books South Africa

Geertz, C. (1975). Thick Description: Toward an Interpretive Theory of Culture. *The Interpretation of Cultures*. London: Hutchinson of London

Gibson, K.L., McKelvie, S.J. & DeMan, A.F. (2008). Personality and culture: a comparison of Francophones and Anlgophones in Quebec. *Journal of Social Psychology, 148*, 133-165

Gill, C.M. & Hodgkinson, G.P. (2007). Development and validation of the Five-Factor Model Questionnaire (FFMQ). *Personnel Psychology, 60*, 731-757

Goldberg, L.R. (1990). An Alternative "Description of Personality": The Big-Five Factor Structure. *Journal of Personality and Social Psychology, 59*, 1216-1229

Government Gazette. (1998). Employment Equity Act. *Republic of South Africa*. Vol. 400, No. 19370, www.hpcsa.org

Gűlgőz , S. (2001). Autobiographical memory in bilinguals. In, R.R. McCrae & J. Allik (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Heaven, P.C.L. & Pretorius, A. (1998). Personality structure among black and white South Africans. *The Journal of Social Psychology, 138*, 664-666.

Heaven, P.C.L., Connors, J. & Stones, C.R. (1994). Three or five personality dimensions? An analysis of natural language terms in two cultures. *Journal of Personality & Individual Differences, 17*, 181-189

Heuchert, J.W.P., Parker, W.D., Stumpf, H. & Myburg, C.P.H. (2000). The five-factor model for South African college students. *American Behavioural Scientist, 44*, 112-125

Horn, B.S. (2000). *A Xhosa translation of the NEO Personality Inventory*. Unpublished masters dissertation, University of Port Elizabeth (UPE), Port Elizabeth, South Africa

Hřebičkova, M., Urbanek, T., Čermák, I., Szarota, P., Ficková, E. & Orliká L. (2002). The NEO Five-Factor Inventory in Czech, Polish and Slovak contexts. In, R.R. McCrae & J. Allik (Eds.). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Irvine, S.H. & Berry, J.W. (1983). *Human Assessment and Cultural Factors*. New York: Plenum Press

Kline, M. (1983). Cultural equivalence. In, Irvine, S.H. & Berry, J.W. (Eds.). *Human Assessment and Cultural Factors*. New York: Plenum Press

Laher, S. (2008). Structural equivalence and the NEO-PI-R: implications for the applicability of the Five Factor Model of personality in an African context. *South African Journal of Industrial Psychology, 34*, 76-80

Larsen, R.J. & Buss, D.M. (2005). *Personality Psychology: Domains of Knowledge About Human Nature* (2nd Ed). New York: McGraw-Hill International

Lyons, E & Chryssochoou, X. (2002). Cross Cultural Research Methods. In, G.M. Breakwell, S. Hammond, & C. Fife-Schaw (Eds.). *Research Methods in Psychology*. (2nd Ed.). London: Sage Publications

Marcus, G.E. & Fischer, M.M.J. (1986). *Anthropology As Cultural Critique: An Experimental Moment in the Human Sciences*. Chicago: University of Chicago Press

McCrae, R.R. (2000). Trait psychology and the revival of personality and culture studies. *American Behavioural Psychologist, 44*, 10-31

McCrae, R.R. (2002a). NEO-PI-R data from 36 cultures. In, R.R. McCrae & J. Allik (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

McCrae, R.R. (2002b). Cross-cultural research on the five-factor model of personality. In, W.J. Lonner, D.L. Dinnel & S.A. Hayes (Eds.). *Online readings in psychology and culture.* Online from: http://www.wwu.edu/~culture

McCrae R.R., and Costa P.T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, 52, 81-90

McCrae R.R. & Costa P.T., (1999). A Five-Factor Theory of personality. In, L.A. Pervin, & O.P. John (Eds.). *Handbook of personality psychology*. New York: Guilford

McCrae, R.R. & Terracciano, A. (2005). Universal features of personality traits from the observers perspective: Data from 50 cultures. *Journal of Personality and Social psychology, 88*, 547-561.

McCrae, R.R. & Allik, J. (2002). Introduction. *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Meiring, D., (2007). *Bias and Equivalence of Psychological Measure in South Africa*. Ridderkerk: Labyrint Publications

Meiring, D., Van der Vijver, A.J.R., Rothman, S. & Barrick, M.R. (2005). Construct, item and method bias of cognitive and personality tests in South Africa. *SA Journal of Industrial Psychology, 31*, 1-8

Ortner, S. (1974). Is Female to Male as Nature is to Culture? In, M. Rosaldo & L. Lamphere (Eds). *Women, Culture and Society*, Stanford: Stanford University Press

Paunonen, S.V. & Ashton, M.C. (1998). The structured assessment of personality across cultures. *Journal of Cross-Cultural Psychology, 29*, 150-171

Piedmont, R.L. (1998). *The Revised NEO Personality Inventory: Clinical and Research Applications.* Library of Congress, New York: Plenum Press

Piedmont, R.L., Bain, E., McCrae, R.R. & Costa, P.T.Jr. (2002). The applicability of the Five-Factor Model in a sub-Saharan culture. In, R.R. McCrae & J. Allik (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Poortinga, Y.H. & Van der Vijver, F.J.R. (1987). Explaining cross-cultural differences: bias analysis and beyond. *Journal of Cross-Cultural Psychology, 18*, 259-282

Poortinga, Y.H., Van der Vijver, F.J.R. & Van Hemert, D.A. (2002). Cross-cultural equivalence of the Big-Five. In, R.R. McCrae & J. Allik (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Prinsloo, C.H. & Ebersöhn, I. (2002). Fair usage of the 16PF in personality assessment in South Africa: A response to Abrahams and Mauer with special reference to issues of research methodology. *South African Journal of Psychology, 32*, 48-57

Prinsloo, C. & van Eeden, R. (1997). Using the South African version of the 16PF in a multi-cultural context. *South African Journal of Psychology, 27*, 151-159

Rolland, J.P. (2002). The cross-cultural generalizability of the Five-Factor Model of Personality. In, McCrae, R.R. & Allik, J. (Eds). *The Five-Factor Model of Personality Across Cultures.* Library of Congress, New York: Kluwer Academic

Rust, J. & Golombok, S. (1992). *Modern Psychometrics: The Science of Psychological Assessment*. London: Routledge

Satz-Miracle, C. (1981). The Aymara language in its social and cultural context. In, M.J. Hardman (Eds). Tallahassee: University Presses of Florida

Squire, C. (2000). Introduction. In, Squire, C. (Eds.). *Culture in Psychology.* London: Routledge

Steensland, B. (2005). Cultural Trauma and Collective Identity. *Social Forces, 83*, 1776-1777

Terracciano, A., Costa, P.T., & McCrae, R.R. (2005). Personality plasticity after age 30. *Personality and Social Psychology Bulletin, 32*, 999-1009

Taylor, I.A. (2000). *The construct comparability of the NEO-PI-R Questionnaire for Black and White employees.* Unpublished doctoral thesis, University of the Free State, Bloemfontein, South Africa

Taylor, I.A. & Boeyens, J.C.A. (1991). *A comparison of black and white responses to the South African Personality Questionnaire.* Pretoria: Human Sciences Research Council

Thornton, J. & Skalnik, P. (1993), Introduction to Malinowski's Reading & Writing. In *The Early Writings of Bronislaw Malinowski*, London: Cambridge University Press

Van der Vijver, A.J.R. & Leung, K. (1997). *Methods and data analysis for cross-cultural research.* Newbury Park: Sage

Van der Vijver, A.J.R. & Tanzer, N.K. (1997). Bias and equivalence in cross-cultural assessment: An Overview. *European Review of Applied Psychology, 47*, 263-279

Van der Vijver, A.J.R. & Rothmann, S. (2004). Assessment in multicultural groups: the South African case. *SA Journal of Industrial Psychology, 30*, 1-7

Van Eeden, R. & Prinsloo, C.H. (1997). Using the South African version of the 16PF in a multicultural context. *South African Journal of Psychology, 27*, 151-159.

Van Hemert, D.A., Van der Vijver, F.J.R., Poortinga, Y.H. & Georgas, J. (2002). Structural and functional equivalence of Eysenck's Personality Questionnaire within and between countries. *Personality and Individual Differences 33*, 1229-1249

Vogt, L.T. (2009). The relationship between the Five-Factor Model and Individualism/Collectivism among South African students. *Psychology in Society, 35*

Wallis, T. & Birt, M. (2003). A comparison of native and non-native English-speaking groups' understanding of the vocabulary contained in the 16PF (SA92). *South African Journal of Psychology, 33*, 182-190

Wilson, M. (2002). Structuring Qualitative Data using a Scaling Procedure. In, G.M. Breakwell, S. Hammond & C. Fife-Schaw (Eds.). *Research Methods in Psychology*. (2nd Ed.). London: Sage Publications

Yang & Bond, M.H. (1990). Exploring implicit personality theories with indigenous or imported constructs: The Chinese case. *Journal of Personality and Social Psychology, 58*, 1087-1095

Yik, M.S.M. & Bond, M.H. (1993). Exploring the dimensions of Chinese person perception with indigenous and imported constructs: creating a culturally balanced scale. *International Journal of Psychology, 28*, 75-95

Appendix A

NEO-PI-R Personality Domains and Facets (Costa & McCrae, 1992)

Neuroticism

Anxiety embodies feelings of nervousness, apprehension, fear and feelings of being tense

Anger & hostility describes unfriendliness, aggression and general enmity

Depression refers to consistent moodiness, feelings of despair, hopelessness or dejection

Self-consciousness describes an emotional or wary personality facet with defined shyness

Impulsiveness is best defined by spontaneous and impetuous traits, and even recklessness

Vulnerability describes a sense of low self-esteem, timidity or weakness

Extraversion

Warmth describes the tendency to be charming, friendly and kind

Gregariousness refers to being sociable, convivial, and high levels of enthusiasm

Assertiveness is best described by surgency, interpersonal power and dominance

Activity embodies characteristics such as being lively, energetic, and have a lot of gusto

Excitement-seeking refers to the drive to obtain exhilaration and pleasure-seeking activities

Positive attention describes a sense of animation, charisma and being zealous

Openness to Experience

Fantasy embodies an ability and propensity to be creative, have desire, and be inventive

Aesthetics refers to a need for refined, outer impressions and visual pleasure

Feelings is being able to connect with one's views and opinions and being insightful

Actions refers to behaviours and expression of thought and personality

Ideas is best described as intellect and insight

Values refers to one's principles, ethics and living standards

Agreeableness

Trust refers to being reliable and loyal, and having the courage of one's convictions

Straightforwardness embodies being honest, candid and sincere

Altruism is described by being good natured, unselfish and humanitarian

Compliance refers to being cooperative, supportive, accommodating

Modesty is defines as having humility, humbleness and not being arrogant

Tender-mindedness is warmth, empathy and not being jealous

Conscientiousness

Competence refers to being capable and dependable

Order embodies thorough, meticulous and organised characteristics

Dutifulness is defined as being obedient, complaint and well behaved

Achievement striving is described by being conscientious and ambitious

Self-discipline embodies being responsible, persevering and devoted

Deliberation is defined by being reflexive, careful and not impulsive

Appendix B

Research Permission Form

I give full permission to the researcher of *Exploring language bias in the NEO-PI-R* to use volunteers from:

(Name of class, department or faculty) _____

in order to fulfil the aims of the research successfully.

I acknowledge that I am fully aware of the aims of the research as well as the strict ethical codes that will be followed, and have no queries or disapproval.

I give this consent voluntarily, without threat of punishment or promise of special reward. I understand that I am not permitted to gain access to any confidential information that is obtained during the course of the data collection and research.

Signature : _____ Date : _____
(Person authorised to give permission)

Signature : _____ Date : _____
(Researcher present)

Appendix C

Participant Information Sheet (Quantitative phase)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

School of Human and Community Development
Private Bag 3, Wits 2050, Johannesburg, South Africa
Tel: (011) 717-4500 Fax: (011) 717-4559

Dear Sir / Madam

Hello! I am currently completing my Masters at the University of the Witwatersrand and am conducting research into personality theory and personality assessment. Part of this research requires your responses on the questionnaire below. It should take you approximately 1½ hours to complete the questionnaire. I understand that this is a substantial investment of your time. However your response is valuable as it will contribute towards a South African understanding of personality and will have an impact on research nationally and internationally. I would therefore like to invite you to participate in this research.

Your responses will remain confidential and anonymity is guaranteed. At no time will I know who you are since the questionnaire requires no identifying information. Completion and return of the questionnaire will be considered to indicate permission for me to use your responses for the research project. Should you choose not to participate, this will not be held against you in any way. As I am only interested in group trends, and have no way of linking any individual's identity to a particular questionnaire, I will not be able to give you individual feedback. You may visit the psychology website (www.umthombo.wits.ac.za/psychology) approximately 9 months after completion of this questionnaire should you require general feedback on the results of this study. If you have any further questions or require feedback on the progress of the research, please feel free to contact me. My contact details appear below my signature.

Thank you for considering to participate in the research project. Please detach and keep this sheet.

_____ _____

Dee R. Franklin
deerfranklin@gmail.com

Sumaya Laher
011 717 4532

Appendix D

Demographic Questionnaire

Please complete the following questionnaire by selecting the option that applies to you, where appropriate.

1. Age:

2. Gender: MALE FEMALE

3. Population group:

This specific response is required for purposes of this research and is not meant to identify or offend any research participant

BLACK COLOURED WHITE INDIAN ASIAN OTHER

If other please specify _____

4. Home language/s:

ENGLISH AFRIKAANS sePEDI siSWATI seSOTHO isiZULU
tshiVENDA seTSWANA isiXHOSA xiTSONGA isiNDEBELE OTHER

If multiple languages are spoken at home, please indicate clearly which languages are dominant (spoken most often) and provide a brief reason as to why this is so:

_____

If other, please specify : _____

5. Highest level of education:

GRADE 8 GRADE 10 GRADE 12
SOME TERTIARY EDUCATION COMPLETED UNDERGRADUATE
COMPLETED POSTGRADUATE OTHER

If other, please specify : _____

6. If English is not your home language, please rate your level of English reading skills with 1 being 'not so good' and 5 being 'excellent'

1 2 3 4 5

7. If English is not your home language, please rate your English understanding / comprehension skills with 1 being 'not so good' and 5 being 'excellent'

1 2 3 4 5

8. Have you ever taken a psychological test before? YES NO

9. If yes, can you rate your familiarity with psychological testing processes from 1 to 5, with 1 being 'somewhat familiar' and 5 being 'very familiar'

1 2 3 4 5

10. If someone knows you well (e.g. spouse, lover, best friend, parent) were to describe you as a person in 5 words, what would they be?

_____
_____
_____
_____
_____

11. Culture is a difficult concept to define, particularly in South Africa where the population is so diverse. However, in research, some researchers choose to define it according to language groups (e.g. isiZulu culture), or according to religious groups (e.g. Christian culture) or according to population grouping (e.g. White culture). Please indicate the cultural grouping that you identify with: _____

12. List 5 words that describe people generally within your cultural grouping:

_____
_____
_____
_____
_____

At any point to follow, if you **do not understand an item or word, please <u>underline</u>** the item or word. If you think an item or word is **inappropriate, please ~~cross out~~** the item or the word.

Insert NEO-PI-R here

If you identified any items or words that you did not understand, briefly indicate why they were difficult to understand.

_____
_____
_____
_____
_____

If you identified any items as inappropriate, briefly indicate why they were inappropriate.

_____
_____
_____
_____
_____

Did this instrument appear to be measuring personality? **YES** **NO**

Briefly substantiate your answer. _____

_____

THANK YOU FOR YOUR COOPERATION!

Appendix E

Participant Information Sheet (Qualitative phase)



UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

School of Human and Community Development
Private Bag 3, Wits 2050, Johannesburg, South Africa
Tel: (011) 717-4500 Fax: (011) 717-4559

Dear Sir / Madam

Hello! I am currently completing my Masters at the University of the Witwatersrand and am conducting research into personality theory and personality assessment. Part of this research requires your participation in a focus group. It should take you approximately 1½ hours. I understand that this is a substantial investment of your time. However your response is valuable as it will contribute towards a South African understanding of personality and is perceived to have an impact on research nationally and internationally. I would therefore like to invite you to participate in this research.

I will be recording the focus group proceedings on video camera, and transcribing your responses thereafter. However, your responses will remain confidential as myself and my supervisor are the only people who will view the recordings and transcriptions. Both the recordings and the transcriptions will be kept in a safe place for the duration of the study and will be destroyed thereafter. Should you choose not to participate, this will not be held against you in any way. You may withdraw your response at any time. You may visit the psychology website (www.umthombo.wits.ac.za/psychology) approximately 9 months after completion of this questionnaire should you require general feedback on the results of this study. If you have any further questions or require feedback on the progress of the research, please feel free to contact me. My contact details appear below my signature.

Thank you for considering taking part in the research project. Please detach and keep this sheet, and sign and return the informed consent documents attached to this information sheet

Dee R. Franklin
deerfranklin@gmail.com

Sumaya Laher
011 717 4532

Appendix F

Informed Consent Form (Focus Groups)

INFORMED CONSENT FORM

(Focus group)

(Please detach this section and return to the researcher)

I, _____ hereby agree to participate in Dee R. Franklin's research entitled "Exploring language bias in the NEO-PI-R". I have read and understand what participation entails as set out in the information sheet. I understand that:

- Participation in this study is voluntary
- No information that may identify me will be included in the research report, and my responses will remain confidential
- I may withdraw information from the study at any time
- There are no risks or benefits associated with the study
- I may chose not to answer any questions that I would prefer not to answer

_____ _____

Signature Date

Appendix G

Informed Consent Form (Recording)

INFORMED CONSENT FORM
(Recording)

(Please detach this section and return to the researcher)

I, _____ hereby agree to participate in a focus group for Dee R. Franklin's research entitled "Exploring language bias in the NEO-PI-R" which will be video recorded. I understand that:

- The tapes and transcriptions will not be seen or heard by any other person other than the researcher and her supervisor
- No information that may identify me will be included in the research report, and my responses will remain confidential
- All tape recordings will be kept in a safe place for the duration of the research and will be destroyed after the research is complete
- Direct quotes from individuals in the focus group may be used in the research report, but the individuals will be referred to as Mr. X, Ms. Y etc.

_____ _____

Signature Date

Appendix H

Informed Consent Form (Confidentiality)

INFORMED CONSENT FORM
(Confidentiality)

(Please detach this section and return to the researcher)

I, _____ hereby agree to keep all information provided by other participants of the focus group confidential. I understand that the views and opinions expressed during the group are to remain in the context of the focus group.

_____ _____

Signature Date

Appendix I

Focus group Question Guidelines

1. What is your understanding of personality?

2. What is your understanding of personality in the South African context?
   If appropriate, address issues of culture specifically as they pertain to language

3. Can aspects of personality be explored by using language and adjectives within language?
   Within your language group, will this be appropriate? Expand
   What was the primary language medium of your secondary and tertiary education?

4. Did you find the language problematic in the questionnaire you answered?
   Were the items difficult to understand? Expand
   Were there words or phrases that you did not understand? Expand
   Were these difficulties due to English not being your first language?
   Were these difficulties due to not being familiar within a South African culture/context?

Appendix J

One-Way Analysis of Variance (ANOVA) at an item level

Item Number	F values	P values
1	2.49	0.13
2	1.63	0.21
3	0.05	0.83
4	3.00	**0.05***
5	0.03	0.86
6	1.98	0.17
7	1.98	0.17
8	6.39	**0.02***
9	6.39	**0.02***
10	0.26	0.62
11	0.59	0.45
12	0.28	0.60
13	0.02	0.89
14	0.20	0.66
15	0.94	0.34
16	3.14	0.09
17	0.74	0.40
18	0.31	0.58
19	0.96	0.34
20	0.97	0.34
21	4.37	**0.04***
22	1.31	0.26
23	2.15	0.15
24	2.65	0.12
25	0.31	0.58
26	1.21	0.28
27	1.00	0.33
28	0.52	0.48
29	0.62	0.44
30	4.71	**0.04***
31	0.08	0.78
32	0.29	0.59
33	0.36	0.55
34	0.05	0.83
35	1.92	0.18
36	0.04	0.84
37	0.38	0.54
38	0.02	0.89
39	0.06	0.81
40	1.09	0.31
41	2.52	0.12
42	2.20	0.15

Item Number	F values	P values
43	0.10	0.75
44	4.44	**0.04***
45	0.51	0.48
46	0.22	0.64
47	0.51	0.48
48	0.30	0.59
49	1.06	0.31
50	1.04	0.32
51	0.27	0.61
52	0.11	0.75
53	0.00	0.96
54	1.27	0.27
55	1.27	0.27
56	2.37	0.14
57	0.30	0.59
58	0.81	0.38
59	0.72	0.40
60	0.46	0.50
61	4.78	**0.04***
62	0.06	0.81
63	2.18	0.15
64	0.78	0.38
65	0.00	1.00
66	0.33	0.57
67	0.14	0.71
68	3.30	**0.05***
69	1.67	0.21
70	0.15	0.70
71	0.05	0.82
72	0.70	0.41
73	0.15	0.70
74	0.36	0.55
75	0.03	0.87
76	1.45	0.24
77	3.60	**0.06***
78	0.07	0.79
79	0.35	0.56
80	1.83	0.19
81	1.90	0.18
82	0.01	0.94
83	0.00	1.00
84	2.14	0.16

***** These items were found to be significant at a 90% confidence level

One-Way Analysis of Variance (ANOVA) at an item level cont/…

Item Number	F values	P values
85	1.51	0.23
86	3.04	**0.07***
87	1.05	0.31
88	0.01	0.91
89	0.30	0.59
90	0.17	0.68
91	1.98	0.17
92	0.12	0.73
93	0.32	0.58
94	0.41	0.53
95	4.04	**0.06***
96	0.01	0.94
97	0.08	0.78
98	0.62	0.44
99	1.64	0.21
100	2.82	0.11
101	0.58	0.45
102	1.52	0.23
103	0.20	0.66
104	1.21	0.28
105	2.12	0.16
106	3.33	**0.07***
107	1.30	0.26
108	4.80	**0.04***
109	0.20	0.66
110	0.46	0.50
111	2.40	0.13
112	3.13	**0.07***
113	0.28	0.60
114	0.06	0.81
115	3.38	**0.07***
116	0.01	0.94
117	0.43	0.52
118	2.44	0.13
119	0.64	0.44
120	0.24	0.63
121	4.32	**0.05***
122	0.27	0.61
123	0.75	0.39
124	0.21	0.65
125	3.64	**0.07***
126	0.11	0.75

Item Number	F values	P values
127	0.10	0.76
128	4.27	**0.05***
129	0.32	0.58
130	2.57	0.12
131	3.48	**0.07***
132	0.72	0.40
133	0.15	0.70
134	0.08	0.79
135	0.13	0.73
136	1.91	0.18
137	0.08	0.77
138	0.03	0.87
139	0.09	0.76
140	0.34	0.56
141	1.27	0.27
142	0.16	0.69
143	0.26	0.62
144	2.68	0.11
145	0.00	1.00
146	1.58	0.22
147	0.20	0.66
148	1.86	0.18
149	0.00	0.96
150	0.12	0.73
151	0.53	0.47
152	0.49	0.49
153	0.01	0.90
154	0.02	0.89
155	3.24	**0.07***
156	0.02	0.90
157	1.63	0.21
158	0.45	0.51
159	0.02	0.90
160	0.07	0.80
161	3.33	**0.08***
162	0.41	0.53
163	1.28	0.27
164	1.94	0.18
165	0.07	0.79
166	3.26	**0.08***
167	3.94	**0.05***
168	0.11	0.75

***** These items were found to be significant at a 90% confidence level

One-Way Analysis of Variance (ANOVA) at an item level cont/…

Item Number	F values	P values
169	0.89	0.36
170	0.08	0.79
171	6.64	**0.02***
172	0.04	0.85
173	1.21	0.28
174	1.07	0.31
175	0.30	0.59
176	1.19	0.29
177	0.73	0.40
178	0.05	0.82
179	0.00	1.00
180	2.28	0.14
181	0.15	0.70
182	0.06	0.80
183	1.08	0.31
184	0.07	0.80
185	0.19	0.67
186	0.82	0.37
187	1.63	0.21
188	1.94	0.18
189	3.84	**0.05***
190	0.00	0.96
191	0.03	0.85
192	0.38	0.54
193	0.00	1.00
194	0.14	0.71
195	0.02	0.90
196	0.39	0.54
197	7.82	**0.01***
198	0.01	0.91
199	0.00	1.00
200	0.25	0.62
201	0.28	0.60
202	1.33	0.26
203	0.01	0.94
204	0.02	0.89

Item Number	F values	P values
205	0.69	0.42
206	0.01	0.93
207	0.55	0.46
208	0.04	0.84
209	0.14	0.71
210	0.53	0.47
211	10.96	**0.00***
212	3.71	**0.05***
213	0.32	0.58
214	0.02	0.89
215	0.11	0.75
216	0.38	0.54
217	4.24	**0.04***
218	0.96	0.34
219	0.44	0.51
220	1.75	0.20
221	0.00	0.95
222	0.95	0.34
223	3.62	**0.05***
224	1.19	0.28
225	0.86	0.36
226	0.41	0.53
227	0.35	0.56
228	0.31	0.58
229	2.33	0.14
230	0.00	0.96
231	0.51	0.48
232	1.53	0.23
233	0.04	0.84
234	1.04	0.32
235	0.15	0.70
236	0.68	0.42
237	5.17	**0.03***
238	0.19	0.67
239	0.01	0.91
240	7.62	**0.01***

***** These items were found to be significant at a 90% confidence level

Appendix K

Pie charts indicating the review of problematic items

