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PSYCHOPATHIC TRAITS IN A GROUP OF WHITE AFRIKAANS-SPEAKING STUDENTS

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B. MIL., B.A. Hons (Psychology)

This thesis is submitted in accordance with the requirements for the degree

Magister Artium (Counselling Psychology)

in the

Faculty of Humanities

Department of Psychology

at the

University of the Free State

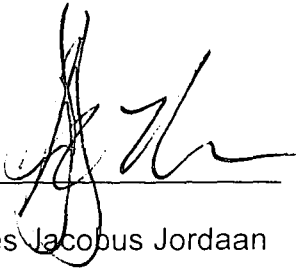
November 2004

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Co-supervisor: Prof. K.G.F Esterhuyse

DECLARATION

I declare that the dissertation hereby submitted by me for the MA (Counselling Psychology) degree at the University of the Free State is my own independent work and has not previously been submitted by me at another university. I further cede copyright of the dissertation in favour of the University of the Free State.

A handwritten signature in black ink, appearing to read 'AJ Jordaan', is written over a horizontal line.

Andries Jacobus Jordaan

Acknowledgements

My sincere appreciation is hereby expressed to the following individuals:

- Prof. D.A. Louw for providing me with the opportunity for academic and personal development under his supervision and for his generous support throughout this research study.
- Prof. K.G.F. Esterhuyse for his patience and superb assistance with the statistical analysis and his availability as co-supervisor.
- Norman Poythress from the University of South Florida and Scott Lilienfeld from Emory University for the opportunity to form part of their study, as well as their regular sharing of knowledge and experience, and direction to information.
- Inge-marie Elliott for her contribution and support.
- My wife, Naomie, for her unlimited support and her personal sacrifices that made this research possible.
- My family and friends for their support.

I thank God for the talents he blessed me with. May my attitude and the quality of my work be a reflection of my sincere gratitude.

Abstract

Although psychopathy is recognised by many psychologists as a distinct concept, it is still surrounded by controversies. Self-report measuring instruments such as the Psychopathic Personality Inventory (PPI), the Levenson Psychopathy Scale (LPS) and the Antisocial Action Scale (AAS) have been developed to address some of the needs regarding the assessment of psychopathy. The aim of this study was to determine the relevance of these instruments in a white Afrikaans-speaking student population, since no standardised psychopathy measuring instruments are available for the South African population. A sample of 86 white Afrikaans-speaking male and female psychology students was used in this study, and translated versions of the above-mentioned instruments, as well as the Negative Emotionality Scale (NEM-30), were administered. The results of this study indicate high internal consistencies for these scales and their sub-scales, except for the Alienated Tendencies (NEM-30) sub-scale. Therefore, it is indicated that these instruments are suitable for assessment and research purposes in white, Afrikaans-speaking student populations. However, the AAS seems to be more suitable as a screening device than diagnostic instrument for psychopathy in this particular population. The results also indicated differences in psychopathic traits across genders and cross-national populations. Limitations of the study are pointed out and recommendations are made.

Key words: psychopathy, Psychopathic Personality Inventory, Levenson Psychopathy Scale, Antisocial Action Scale, Negative Emotionality Scale, Afrikaans-speaking students, gender differences

Samevatting

Hoewel psigopatie deur talle sielkundiges as 'n afsonderlike konsep beskou word, word dit steeds deur kontroversie omring. Selfbeskrywingsvraelyste soos die Psychopathic Personality Inventory (PPI), die Levenson Psychopathy Scale (LPS) en die Antisocial Action Scale (AAS) is ontwikkel om sekere behoeftes rakende die assessering van psigopatie aan te spreek. Die doel van hierdie studie was om die relevansie van die genoemde meetinstrumente vir 'n wit Afrikaanssprekende studentepopulasie te bepaal, aangesien geen gestandaardiseerde meetinstrumente vir toepassing in die Suid-Afrikaanse konteks beskikbaar is nie. 'n Steekproef van 86 wit Afrikaanssprekende, sielkunde studente (mans en vroue) is by die studie ingesluit. Afrikaanse vertalings van die bogenoemde vraelyste, asook die Negative Emotionality Scale (NEM-30), is op die steekproef afgeneem. Die resultate van die studie dui op 'n hoë interne geldigheid vir al die skale en hul sub-skale, behalwe vir die "Alienated Tendencies" sub-skaal van die NEM-30. Hierdie meetinstrumente blyk dus geskik te wees vir assesserings- en navorsingsdoeleindes in wit Afrikaanssprekende studente populasies. Dit kom egter voor of die AAS meer geskik is om vir sifting as vir diagnostiese doeleindes in die genoemde populasie gebruik te word. Die resultate dui ook op verskille in psigopatiese eienskappe in verskillende geslagte (mans en vroue) en kruis-nasionale populasies. Die beperkings van die studie word aangedui en aanbevelings word gemaak.

Sleutelwoorde: Psigopatie, Psychopathic Personality Inventory, Levenson Psychopathy Scale, Antisocial Action Scale, Negative Emotionality Scale, Afrikaanssprekende studente, geslagsverskille

LITERATURE REVIEW

Introduction

The controversial history of psychopathy and antisocial personality disorder (ASPD) has reached a stage where several authorities in the field agree that, despite overlaps, the two are indeed separate entities (Barlow, & Durand, 2002; Cale, & Lilienfeld, 2003; Hare, 1996; Pitchford, 2001). However, this recognition of psychopathy as a distinct concept also necessitates expanding the research data to clarify several of its aspects (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003).

One of the research areas especially requiring attention is the assessment of psychopathy. A lack of clarity in this regard may lead to invalid and unreliable measuring instruments – and a return to the perplexity of the past. This is especially true as far as the role of culture in the assessment is concerned. Research has mostly been conducted in the United States (US) on Caucasian male offenders, and therefore relatively little information is available on psychopathy in other ethnic groups and cultures (Cooke, Kosson, & Michie, 2001; Salekin, Trobst, & Krioukova, 2001). However, from the existing data there seems to be consensus that culture does influence the prevalence and manifestation of psychopathy (Pethman, & Erlandsson, 2002). Unfortunately no research data could be traced concerning the effect of culture on psychopathy in South Africa. This is unfortunate as the ethnically diverse and multicultural South African society, with its 11 official languages and even more cultural groups, presents ample opportunity for research on cultural manifestations of psychopathy.

Another neglected area of research is psychopathic features among females. Researchers have traditionally focused largely or almost exclusively on males (Cale, & Lilienfeld, 2002).

Most of the research that has been conducted with females has been in correctional settings. Nonetheless, data from correctional settings indicate that females are much less likely to be classified as psychopaths than males (Jackson, Rogers, Neumann, & Lambert, 2002; Salekin, Rogers, & Sewell, 1997). In one of the few studies on gender differences in a non-criminal group, Lilienfeld and Andrews (1996) found higher psychopathy scores among college men than women. Bias and misdiagnoses could account partially for the difference in prevalence rates (Vitale, & Newman, 2001; Widiger, 1998). Apart from differences in prevalence rates, the construct of psychopathy in female samples seems to be controversial. Salekin *et al.* (1997) are of the opinion that different constructs apply to male and female samples, whereas Lynam, Whiteside and Jones (1999) concluded that the construct is virtually the same for the two sexes.

Psychopathic features in the general population have received relatively little research attention in the past (Benning *et al.*, 2003). However, researchers agree that this population also has its fair share of undiagnosed psychopaths (Babiak, 2000; Wilson, Nathan, O'Leary, & Clark, 1996). There also seems to be agreement among psychologists that these so-called sub-clinical or successful psychopaths might function quite successfully in certain segments of society without getting into trouble with the law (Zagon, & Jackson, 1994). One of the outstanding features of such high profile individuals is their intellectual ability, which might protect them from getting into more serious trouble, or on the other hand prevents them from being detected (White, Moffit, & Silva, 1989). The lack of an appropriate measure to identify psychopaths in the community used to be part of the psychopathy dilemma (Benning *et al.*, 2003).

Against the aforementioned summarised background, it was decided to investigate the psychometric properties of the self-report instruments that will be used in this study. Relations between these instruments, as well as gender differences in psychopathy, will be investigated, while comparisons with international findings will be made.

Culture and psychopathy

Most studies on psychopathy have been conducted on white North American male criminals, although research involving other cultural groups has increased, especially in the past decade (Cooke *et al.*, 2001; Cooke, & Michie, 1999; Hildebrand, & De Ruiter, 2004; Pethman, & Erlandsson, 2002).

Hildebrand and De Ruiter (2004) concluded that psychometrically assessed psychopathy is consistent across cultures. They compared a male forensic sample in the Netherlands with results reported in other European studies. However, Hare (1998) argued that societal and cultural structures and norms influence behavioural expressions of psychopathy. These norms and structures will also influence the extent to which psychopaths differ. Pethman and Erlandsson (2002) found similarities in aberrant self-promotion in Swedish and American student samples (the authors regard aberrant self-promotion and sub-clinical psychopathy as synonymous). They concluded that, despite similarities, cultural differences did occur. It must be taken into account that the Swedish sample consisted predominantly of female participants (77%), which could account for some of the differences.

In a comparison of prison samples in North America and Scotland, Cooke and Michie (1999) found provisional evidence for a relatively consistent construct of psychopathy across cultures. However, the prevalence of psychopathy in prison samples in North America is

higher than in Scotland, even with lower cut-off scores in the Scotland sample. They ascribe the difference in the prevalence rates to several possible factors such as differences in sampling (age, gender, types of offences, socio-economic status and level of education), and differences between the two cultures.

Researchers agree that measuring instruments cannot be indiscriminately used with individuals or groups for whom it was not standardised (Bedell, Van Eeden, & Van Staden, 1999; Padilla, 2001). The data generated by a measure that was not specifically developed for the target population, can be completely inappropriate and at risk of misinterpretation (Arnold, & Matus, 2000). Apart from the risk of misinterpretation, the translation of measuring instruments into a target language may potentially threaten the validity of the instrument. Equivalent meanings across languages (and cultures) need to be ensured through proper procedures (Padilla, 2001). The seriousness of the matter is illustrated by the fact that the Professional Board of Psychology in South Africa regards the use of culturally unfair measuring instruments as unethical and unprofessional. It also is a contravention of the Employment Equity Bill of South Africa (Bedell *et al.*, 1999).

Female psychopathy

Research done on female psychopathy indicates complex differences from male psychopathy. As mentioned, prevalence rates for female normal and clinical samples have been reported to be lower than rates reported for similar male samples. However, it is difficult to interpret these differences in prevalence rates. Firstly, differences could be attributed to gender biases in the instruments (e.g. Forth, Brown, Hart, & Hare, 1996). Items included in measuring instruments could be more indicative of male psychopathy. Secondly, sample selection for psychopathy frequently tends to be skewed as specific populations (often with a

high tendency for psychopathy) are targeted (e.g. Warren, Burnette, South, Chauhan, Bale, Friend, & Van Patten, 2003). Thirdly, a wide variety of measuring instruments is used in the assessment of psychopathy. Although these instruments correlate to a greater or lesser extent, they do not measure the exact same attributes (Cale, & Lilienfeld, 2003). It is, therefore, understandable that differences will be found.

Another aspect of the complexity of female psychopathy is its relation to other personality disorders. In a meta-analysis, Cale and Lilienfeld (2002) conclude that there may be a shared etiology among somatisation disorder (SD), histrionic personality disorder (HPD) and antisocial personality disorder (ASPD). Warren *et al.* (2003) concluded that there is a comorbidity between psychopathy and other personality disorders, suggesting that psychopathy is a combination of diagnostic criteria associated with antisocial, narcissistic, histrionic, paranoid, and schizotypal personality disorders. Furthermore, they found preliminary support for the premise that female psychopathy begins with a basic antisocial personality orientation. However, differences between forensic and non-forensic samples have been noted in this regard. For example, Salekin *et al.* (2001) did not find substantial convergence between female psychopathy and disorders such as histrionic personality disorder, as is the case with forensic samples (Salekin *et al.*, 1997).

The complexity of female psychopathy also extends to the manifestation of psychopathy, as different behaviours seem to be present in female offender samples than in their male counterparts. The research of Salekin *et al.* (1997) indicates more of an overlap between personality traits and deviant social behaviour in female samples than in male samples. Their research also indicates that, in addition to their antisocial lifestyle, female psychopathy manifests more prominently in promiscuous sexual behaviour and lack of realistic long-term

goals, thus emphasising behavioural aspects related to psychopathy instead of personality traits. As a result, they strongly support a female construct of psychopathy in an offender sample. However, contradictory results were found in a normal population. Lynam *et al.* (1999) concluded that the construct of psychopathy, measured with a self-report measure, is virtually the same for male and female student samples, thus indicating that psychopathy manifests in similar ways in men and women. To complicate matters, Wilson, Frick and Clements (1999) indicated that the female construct of psychopathy in institutionalised samples also applies to non-institutionalised samples. It is, therefore, clear that more research should be conducted to get more clarity on this aspect.

Psychopathy in a non-criminal population

Cleckley (1941/1982) emphasised the fact that psychopathy is a dysfunctional personality style that is prevalent in the general population. Cale and Lilienfeld (2002) support Cleckley's notion in their analysis of the nature of psychopathy. They do not accentuate deviant social behaviour, but rather the dimensional nature of psychopathy as well as the personality traits associated with it. Unidentified psychopaths are found among businessmen, politicians, doctors, lawyers, and university students (Barlow, & Durand, 2002; Zagon, & Jackson, 1994). Features such as good social skills, high intelligence, and socio-economic status may help these so-called sub-clinical psychopaths to take advantage of others, without clashing with law enforcement agencies. Many of the behaviours of these subclinical psychopaths are not illegal, but nevertheless unethical, immoral, or detrimental to others (Hare, 1994).

Industrial psychopaths, a term referring to sub-clinical psychopaths in business, exhibit the same personality traits as criminal psychopaths, but without the explicit criminal behaviour, according to Babiak (2000). He considers psychopaths in organisations as masters in the art

of manipulation, where they manipulate people at all levels of the organisation. Although their actions are not criminal, they still have a negative influence on people and organisations. The deception of the psychopath frequently results in a decline in productivity and the quality of customer service. It also results in the loss of talented and skilled staff, and a decline in teamwork and in morale (Babiak, 2000). Ultimately the organisation also loses financially. Frequently the perpetrator has a successful career at the expense of others and the organisation. Psychopaths stay in organisations for several reasons. Psychopaths in a management position can abuse their power to control people and resources. They are hardly ever involved in detailed work, and they earn high salaries. They have a tendency to change employment often enough not to be detected (Babiak, 2000).

When researchers in the field of psychopathy also started to focus on sub-clinical populations, specific questions and limitations came to the fore. For instance, many of the measuring instruments that were initially used in sub-clinical samples assess social deviance related to psychopathy, but not psychopathic personality traits per se. Another problem was that interview-based procedures, typically used in clinical populations, are lengthy and not conducive to research with larger, non-institutionalised populations (Lynam *et al.*, 1999). The development of self-report measuring instruments of psychopathy address this void, but they also have limitations, as they are susceptible to malingering or impression management and other response styles. As a matter of fact, the deceitful nature of psychopaths and their lack of insight into their own problems encourage them to manipulate measuring instruments (Cale, & Lilienfeld, 2003). Lynam *et al.* (1999) argue that response modulation might be pathogenic to psychopathy. However, Edens (2004) concluded that, although traits more reflective of general social deviance appear highly susceptible to overt dissimulation, the assessment of personality traits associated with psychopathy is minimally affected by attempts to create an

overly favourable impression. Fortunately, the latest versions of self-report psychopathy scales seem to address some of the problems associated with these scales (Levenson, Kiehl, & Fitzpatrick, 1995; Lilienfeld, & Andrews, 1996). More research in this field will hopefully lead to the development of more reliable and valid measuring instruments and contribute to solving controversies still associated with the assessment of psychopathy.

METHODOLOGY

Participants and sampling

Most of the cultures in South Africa are far removed from Western culture. From a psychometric point of view, these large differences create numerous assessment difficulties and complications. It was, therefore, decided to rather focus on a population that has close resemblances with American and European cultures where most of the studies on psychopathy were conducted. To a certain extent it was hoped that this would decrease the psychometric problems and complexities inherent in cross-cultural assessment.

More specifically, it was decided to incorporate white Afrikaans-speaking students in this study. (The ancestors of the present-day white Afrikaans-speaking South Africans, also known as Afrikaners, arrived in South Africa in 1652. They are, therefore, fully-fledged Africans, even more so than many Americans are American, for example. However, they still maintain a strong Westernised culture. A convenience sample of 88 white Afrikaans-speaking students (most of the white students in the Free State are Afrikaans-speaking) was recruited from undergraduate psychology classes at the University of the Free State.

Students from most of the faculties at the University of the Free State are represented in this study, as Psychology can be included in most of the degree programmes presented at this

university. However, the majority of the participants were recruited from the Faculty of Humanities. Volunteers were asked to complete psychological measuring instruments for a research project. Students were motivated to take part in the project by signifying the opportunity they would have to experience the role of a participant in research and, therefore, create a frame of reference for their own future research. Students were remunerated for their time and effort in completing the instruments.

Anonymity was assured throughout the project. Questionnaires were made available during lectures, as well as at a specific location at the Department of Psychology where the measuring instruments were returned. The instruments were not completed under controlled circumstances; students were allowed to complete them at their leisure and return them within a week.

An unequal number of male and female students take Psychology as a subject. This disparity is represented in the sample in the sense that 34 (39,5%) male students were included and 52 (60,5%) female students. Two students did not indicate their gender. The average age of the male sample was 22 with the youngest participant 19 and the oldest 30, with the majority between 20 and 22 years old. The ages in the female sample varied between 18 and 47. The average age was 21,7 and the majority were between 19 and 23.

Measuring instruments

Four measuring instruments were utilised in this study. All the questionnaires were translated into Afrikaans. Translations were conducted with utmost caution, and were checked by an Afrikaans-speaking professor in Psychology, in an attempt to avoid language or cultural bias in the instruments.

a. *Psychopathic Personality Inventory (PPI)* (Lilienfeld & Andrews, 1996). The PPI is a 187 item self-report questionnaire that measures personality traits associated with psychopathy. Respondents rate themselves on a four-point Likert scale (1 = false; 2 = mostly false; 3 = mostly true; 4 = true). The PPI provides a total score as well as eight subscales (Machiavellian Egocentricity, Social Potency, Cold-heartedness, Carefree Non-helpfulness, Fearlessness, Blame Externalisation, Impulsive Nonconformity and Stress Immunity) assessing different aspects of psychopathy. Three validity scales are included to identify participants who attempt to malingering or respond inconsistently. The instrument was specifically developed to assess dimensional psychopathic traits in non-criminal samples and has no cut-off scores.

b. *Negative Emotionality Measure (NEM-30)* (Waller, Tellegen, McDonald & Lykken, 1996). The NEM-30 is a 30 item, dichotomously answered (true/false) personality questionnaire that was developed to assess global maladjustment, especially emotional sensitivity, nervous tension, worry-proneness, and alienated and aggressive tendencies.

c. *Levenson Psychopathy Scale (LPS)* (Levenson *et al.*, 1995). This self-report measuring instrument consists of 26 items that are rated on a four-point scale from strongly agree to strongly disagree. The two separate scales measure primary and secondary psychopathy in student samples.

d. *Antisocial Action Scale (AAS)* (Levenson *et al.*, 1995). The AAS is a 24 item self-report questionnaire developed to assess the frequency of antisocial behaviours typical of students. The scale includes antisocial and prosocial items, which are reverse scored. Endorsement options consist of four options: I have never done this, I have done this once or twice, I have done this a few times, and I have done this frequently. Levenson *et al.*

(1995) consider the questionnaire an accurate measure of psychopathy, especially because of high correlations with the primary and secondary psychopathy scales in the LPS.

The psychometric properties of the instruments that will be used in this study were found to be good. However, as the research on these properties was conducted in the USA and does not necessarily apply to the South African situation, it was decided to calculate Cronbach's α -coefficient to determine internal consistencies. As the AAS focuses specifically on more observable and measurable student behaviour, the relation between the AAS and other measuring instruments (PPI, LPS and NEM-30) will be investigated. Possible differences in the above-mentioned relation for male and female samples will also be explored. Possible differences in the average scores for the respective total and sub-scale scores in male and female samples will also be investigated.

Statistical analysis

Pearson's product moment correlation (Howell, 2002) will be used to investigate the relationship between the AAS and the other measuring instruments. Fisher's r - to Z transformation will be used to determine whether the relationship for the two sexes differs significantly. In this case, the nil hypothesis states that the difference between the two populations equals nil. The following Howell (2002) test statistics can be used to investigate the nil hypothesis:

$$Z = \frac{r'_1 - r'_2}{\sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}}$$

where r'_1 and r'_2 are the z-values of the respective correlations r_1 and r_2 . The original correlation coefficient is transformed according to Fisher's r - to Z before the test statistical values are calculated.

In order to comment on the practical importance of statistically significant results, the practical significance of the results will be considered. As the measure of practical significance, effect sizes will be calculated. Seeing that the linear correlation between the variables will be investigated, Cohen's suggestion (Steyn, 1999) of implementing ρ , the correlation coefficient (and its guidelines) as effect size, will be used. He suggests the following values as a guideline:

$\rho = 0,1$: small effect

$\rho = 0,3$: medium effect

$\rho = 0,5$: large effect

With regard to the second research question, the significance of the differences in average scores on all the different scales will be investigated. Only one independent variable (gender) and several dependent variables will be investigated. Therefore, a one-way multivariate analysis of variance (MANOVA) will be performed (Tabachnick, & Fidell, 1989). If the MANOVA analyses indicate a significant result (F-value), one-way analyses of variance will be performed on all the dependent variables.

The abovementioned guidelines will be used to investigate the practical significance of all the results. Only when statistical significant results (on the 1% or 5% level) are found, will the respective effect sizes be calculated.

RESULTS

As mentioned above, the original English versions of the measuring instruments were translated into Afrikaans. It was therefore decided to determine internal consistencies. For this purpose Cronbach's α -coefficient was calculated with the assistance of the SPSS computer programme (SPSS Incorporated, 1983). The coefficients for the total, as well as the sub-scale scores are indicated in Table 1.

Table 1

Cronbach's α -coefficients for the total and the sub-scales of the measuring instruments

Construct	Scale	α -coefficients
Psychopathic Personality Inventory (PPI)	Total	0,926
	Machiavellian Egocentricity	0,877
	Social Potency	0,851
	Fearlessness	0,818
	Cold-heartedness	0,742
	Impulsive Nonconformity	0,746
	Alienation	0,850
	Carefree Non-planfulness	0,861
	Stress Immunity	0,814
Negative Emotionality Measure (NEM-30)	Total	0,782
	Emotional Sensitivity	0,612
	Nervous tension	0,673
	Worry-proneness	0,518
	Alienated Tendencies	0,183
	Aggressive Tendencies	0,574
Levenson Psychopathy Scale (LPS)	Total	0,857
	Primary Psychopathy	0,832
	Secondary Psychopathy	0,677
Antisocial Action Scale (AAS)	Total	0,760

The coefficients in Table 1 indicate high internal consistencies for the respective scale totals, ranging from 0,93 (PPI), 0,78 (NEM-30) and 0,86 (LPS) to 0,76 (AAS). These total scores compare favourably with those found in the USA, where properties of 0,90 to 0,93 (PPI), 0,83 (NEM-30) and 0,70 (AAS) were obtained (Levenson *et al.*, 1995; Lilienfeld & Andrews, 1996; Lilienfeld & Hess, 2001). Internal consistencies for the LPS are only available for the two sub-scales.

As far as the sub-scales of the PPI are concerned, all obtained high internal consistencies of 0,7 to 0,9. This finding duplicates internal consistencies during the development of the PPI that were found to be between 0,7 and 0,9 for the sub-scales (Lilienfeld & Andrews, 1996). In the present study 75% of the sub-scales were between 0,8 and 0,9. This finding is the same as in the Lilienfeld and Andrews' study where 75% of the sub-scales obtained scores between 0,8 and 0,9.

Concerning the LPS, in the present study internal consistencies for Primary and Secondary Psychopathy are 0,83 and 0,68 respectively. These consistencies are basically the same as those found by Levenson *et al.* (1995): in their study the internal consistency for Primary Psychopathy was 0.82 and 0.63 for Secondary Psychopathy.

To conclude: the internal consistencies for the total and the sub-scales compare favourably with the consistencies in the present study, indicating that the translated PPI, LPS and AAS can be used with confidence in a white Afrikaans-speaking population.

In the present study, four sub-scales of the NEM-30 are internally consistent. The sub-scale of Alienated Tendencies is not internally consistent. Nevertheless, consistencies (excluding Alienated Tendencies) range from 0,52 to 0,67 and will, therefore, be used in further analysis of the present data. No data could be traced on the internal consistencies of the NEM-30 sub-scales, and as a result comparisons could not be made to find an explanation for the low internal consistency for Alienated Tendencies. It is, therefore, unclear whether the inconsistency lies within the measure or the respondents. Because of the moderate to high internal consistencies in all the other scales and sub-scales, it is likely that the low internal consistency for Alienated Tendencies could be ascribed to the questionnaire.

The correlations between the AAS total score and the total scores of the other measuring instruments have been investigated for the total group. Pearson's product moment correlation was used for this purpose, with the support of the SAS computer programme (SAS Institute, 1985). The results are indicated in Table 2.

Table 2

Correlations between the AAS and other psychopathy measuring instruments

Scales	Student general deviance scale						
	Total group		Male		Female		Z
	N	r	N	r	N	r	
PPI: Total	82	0,52**	32	0,52**	48	0,35*	0,894
Machiavellian Egocentricity	86	0,56**	33	0,50**	51	0,46**	0,224
Social Potency	83	-0,02	33	-0,25	48	-0,01	-1,045
Fearlessness	86	0,34**	33	0,43*	51	0,15	1,332
Cold-heartedness	86	0,32**	33	0,28	51	0,09	0,853
Impulsive Nonconformity	86	0,34**	33	0,32	51	0,26	0,284
Alienation	85	0,32**	32	0,23	51	0,32*	-0,422
Carefree Non-planfulness	86	0,49**	33	0,58**	51	0,34*	1,332
Stress Immunity	86	-0,14	33	-0,32	51	-0,05	-1,216
NEM-30: Total	61	-0,42**	24	-0,44*	36	-0,32	-0,502
Emotional Sensitivity	86	-0,22*	33	-0,38*	51	-0,23	-0,716
Nervous tension	86	-0,11	33	-0,09	51	-0,03	-0,258
Worry-proneness	86	-0,13	33	-0,05	51	-0,30*	1,121
Alienated Tendencies	61	-0,37**	24	-0,51*	36	-0,21	-1,254
Aggressive Tendencies	86	-0,52**	33	-0,46**	51	-0,27	-0,948
LPS: Total	79	0,63**	32	0,65**	45	0,47**	1,099
Primary Psychopathy	81	0,62**	32	0,64**	47	0,46**	1,092
Secondary Psychopathy	82	0,48**	32	0,46**	48	0,37**	0,754

**p <= 0,01

*p <= 0,05

+ p ≤ 0,05 (critical z for two-sided tests: ±1,96)

++ p ≤ 0,01 (critical z for two-sided tests: ±2,58)

From Table 2 it appears that, with the exception of two PPI sub-scales (Social Potency and Stress Immunity) and two NEM-30 sub-scales (Nervousness-tension and Worry-proneness), the remaining total scores, as well as the sub-scale scores, correlate with the AAS at the 1%

or 5% significance level. These coefficients indicate medium to large effect sizes, which suggests that the results are of relatively large practical value. The results from Table 2 also indicate significant correlations between the total and sub-scale scores of the LPS, and the AAS scores for males and females. The correlations for both gender groups are significant at the 1% level, which is related to large effect sizes. Levenson *et al.* (1995) also found significant correlations (1% level) between the AAS and the Primary and Secondary Psychopathy sub-scales. Since the LPS measures personality traits, as well as behaviour associated with psychopathy, it is expected that the AAS by implication also measures both aspects of psychopathy. No other studies comparing the AAS with other measuring instruments used in this study could be traced.

Significant correlations (1% level) occur between the AAS and PPI total scores, as well as between the AAS and six PPI sub-scale scores. However, Lilienfeld and Andrews (1996) report low negative correlations between Alienation and Stress Immunity and several of the PPI sub-scales. Chapman, Gremore and Farmer (2003) found similar results. In their study Social Potency, Cold-heartedness and Stress Immunity do not correlate with the other sub-scales of the PPI. More importantly, Benning *et al.* (2003) identified two higher order factors in the PPI. The first factor consists of the Social Potency, Fearlessness and Stress Immunity sub-scales. These sub-scales are associated with the personality traits of psychopathy as opposed to behavioural aspects. Therefore, the low correlations found between the AAS and Social Potency and Stress Immunity imply a low correlation between the AAS and personality traits associated with psychopathy.

The AAS has significant negative correlations with the NEM-30 total score for the whole group (males and females combined) and with the total score for the male sample. However,

the AAS does not correlate significantly with the total score for the female sample. There are also significant negative correlations in the Emotional Sensitivity and the Aggressive Tendencies sub-scales and the AAS for the total group and the male sample, without a significant female correlation. Since the sub-scale of Aggressive Tendencies is not internally consistent, it will not be considered in these results. Another difference is a significant negative correlation between the AAS and the Worry-proneness sub-scale for female participants, without significant correlations for the total group and males. Therefore, psychopathy is not the same for male and female samples on an emotional level, implying that the constructs for male and female psychopathy might differ on an emotional or personality level.

It is also clear from Table 2 that there are no significant differences in the correlations for male and female students regarding all the scales and sub-scales.

Subsequently, possible differences in the average scores on the respective total scales and sub-scales for male and female students were investigated. A one-way MANOVA procedure, with support from the SAS computer programme (SAS Institute, 1985) was conducted for this purpose. The results are presented in Table 3.

Table 3
MANOVA F-values according to gender

Source	F-value+	v	P
Gender	2,73	18; 37	0,0048**

** $p \leq 0,01$

+ Hotelling-Lawley T-trace was used.

From Table 3 it appears that there are significant differences (1% level) in the average total scores and sub-scale scores between the two genders. To determine on which of the total scores and/or sub-scale scores significant differences in average between the two genders were found, one-way analyses of variance were conducted. The results with regard to the dependent variables and the calculated effect sizes (f) are presented in Table 4.

From Table 4 it is clear that there are significant differences in male and female average scores on the PPI total scale and four of the sub-scales. For one sub-scale, Cold-heartedness, the difference is significant on the 5% level, and for the other sub-scales as well as the PPI total score, significant differences were found on the 1% level. Significant differences were also present concerning the averages of the total scale, as well as the two sub-scales for the LPS. With regard to Secondary Psychopathy, the difference is significant on the 5% level and on the 1% level for the total scale and the Primary Psychopathy scale. The corresponding f -values indicate a medium to large effect size.

Table 4

Differences in average scores for total scales and sub-scales of the two genders

Scales	F-value	p	f
PPI: Total	11,46	0,0013**	0,37
Machiavellian Egocentricity	7,79	0,0072**	0,31
Social Potency	0,08	0,7757	
Fearlessness	2,76	0,1024	
Cold-heartedness	4,91	0,0309*	0,24
Impulsive Nonconformity	13,23	0,0006**	0,40
Alienation	0,15	0,6978	
Carefree Non-planfulness	8,15	0,0061**	0,32
Stress Immunity	1,88	0,1757	
NEM-30: Total	1,71	0,1963	
Emotional Sensitivity	1,99	0,1639	
Nervousness-tension	0,54	0,4675	
Worry-proneness	0,19	0,6650	
Alienated Tendencies	0,67	0,4152	
Aggressive Tendencies	2,39	0,1280	
LPS: Total	10,52	0,0020**	0,36
Primary Psychopathy	10,98	0,0017**	0,36
Secondary Psychopathy	5,12	0,0276*	0,25
AAS: Total	3,98	0,0512	

** p <= 0,01

* p <= 0,05

The present findings that there are no significant differences between male and female students on the AAS, differ from those of Levenson *et al.* (1995) who reported higher scores for male than female participants. As the AAS seems to measure more overt than covert behaviour, it remains an open question whether cultural differences would find more explicit expression in overt behaviour, which could be a hypothetical explanation for the different

findings. This is an area that has been almost totally neglected by psychological research and could bring forth revealing results.

No data could be found to compare gender differences on the NEM-30 with the results from this study.

Because the sample consists of only two groups, no *post hoc t*-tests were conducted. The averages and standard deviations of the two genders on the applicable sub-scales are presented in Table 5.

Table 5
Averages and standard deviations of the two genders on the applicable dependent variables

Variable	Male		Female	
	X	s	X	S
PPI: Total	378,42	35,48	338,39	35,38
Machiavellian Egocentricity	67,85	11,81	57,04	11,14
Cold-heartedness	42,88	7,30	37,58	6,32
Impulsive Nonconformity	40,18	5,76	34,38	7,18
Carefree Non-planfulness	39,82	9,20	33,87	7,45
LPS: Total	54,94	9,20	46,35	10,53
Primary Psychopathy	33,12	6,55	26,63	7,05
Secondary Psychopathy	21,82	3,90	19,65	4,83

The results in Table 5 indicate higher average scores for male than female students on the PPI and LPS total scales, as well as the six sub-scales.

The results for the PPI correspond partly with the results by Lilienfeld and Andrews (1996). In their results men scored significantly higher than women on the total scale and the

Machiavellian Egocentricity, Cold-heartedness, Fearlessness, Impulsive Nonconformity, Stress Immunity and Alienation. In the present study, however, there were no significant differences between males and females on the Fearlessness and Alienation sub-scales. In the Lilienfeld and Andrews study male and female participants did not differ significantly on the Carefree Non-planfulness sub-scale, as was the case in the present study. The differences between the two studies should, however, be interpreted with care and not necessarily be attributed solely to cultural factors: the research results of Hamburger, Lilienfeld and Hogben (1996) also differ from those of Lilienfeld and Andrews. It should nonetheless be informative to determine to what extent (sub-) cultural variables did play a role in the results. This, however, is not within the scope of this study.

Regarding Primary and Secondary Psychopathy (LPS), in the present study male participants obtained significantly higher scores on both scales than their female counterparts. Levenson *et al.* (1995) also reported significantly higher scores on both scales for male and female samples. Therefore, constructs measured by the two sub-scales of the LPS seem to be stable across the populations involved in the two studies.

DISCUSSION

The results from the present study indicate high internal consistencies for all the measuring instruments used in this study, with the exception of the Alienated Tendencies sub-scale from the NEM-30. The psychopathy measuring instruments (PPI, LPS and AAS) as such compares favourably with American studies. Therefore, these instruments seem useful in studying psychopathy in the white Afrikaans-speaking population in South Africa.

The measurable antisocial behaviour focus of the AAS implies that only a restricted spectrum of psychopathic traits is measured. Personality traits, which are essential to psychopathy, are not measured by the AAS; therefore, it seems to be an unsuitable measuring instrument in psychopathy research. It is suggested that the AAS can at best be used as a screening device in a student population.

Significant gender differences in the results of the PPI and the LPS, confirm differences in the constructs of male and female psychopathy. However, these differences are not stable across populations, signifying the presence of alternative variables such as cultural or sub-cultural differences.

A limitation of this study is that large samples of male and female students have not been used, therefore one might not be able to extrapolate the results to the white Afrikaans-speaking student population in general. The gender difference reported in this study could also be affected by the small samples. Another limitation of this study is that cultural differences were not empirically investigated; therefore, it is uncertain if the differences are significant.

Despite the limitations of this study, valuable information was obtained regarding the assessment of psychopathy in the white Afrikaans-speaking student population. However, in the complex language and cultural situation in South Africa, more research is necessary to clarify the appropriateness of these questionnaires for other spheres of the white Afrikaans-speaking culture.

Furthermore, it speaks for itself that the same applies to all the other cultures in South Africa. As mentioned in the literature review of this study, psychometry in South Africa finds

itself in a predicament where standardised measuring instruments for all the cultural groups basically do not exist. Clearly much more research is necessary in this field.

Since it seems that suitable measuring instruments for the assessment of psychopathy in Afrikaans-speaking white students have been identified, it is recommended that studies be conducted to investigate gender and cultural differences thoroughly. More specifically, the prevalence and constructs of male and female psychopathy need further investigation in South Africa. Statistical comparisons with international populations can also be conducted. However, the validation of measuring instruments for the assessment of psychopathy in other cultural groups in South Africa, as well as cross-cultural investigations, should have priority. Research in this regard will contribute to the equality of South Africans.

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