

# Personality Testing and Police Selection: Utility of the 'Big Five'

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While I/O psychologists have traditionally viewed personality testing as contributing little to the prediction of job performance, recent development of the 'big five' personality constructs has shown that personality tests can be valid predictors of performance and may add significant incremental validity to tests of cognitive ability. The generality of these higher-order traits, however, may limit their usefulness in a selection setting. Correlational data is presented from a sample of police recruits ( $n=284$ ) who completed the NEO Personality Inventory-Revised early in their basic training. Both higher- and middle-order traits were found to be linked to both broad and narrow performance outcomes. Conscientiousness added incremental validity to cognitive testing. The assessment of higher-order and middle-order personality traits for personnel selection is discussed.

During the past three decades the view that personality is a poor predictor of job performance has become established among many occupational psychologists in New Zealand. Early reviews (Ghiselli & Barthol, 1953; Guion & Gottier, 1965; and Mischel, 1968) that helped shape this gloomy evaluation may have been overly pessimistic in their conclusions. Many criticisms raised by early personality test reviews (eg. Mischel, 1968) have been addressed and shown to be less significant than previously thought, or have resulted in improved methodology (Hogan & Nicholson, 1988). One such improvement is the development of personality inventories designed to measure qualities among typical individuals instead of psychopathology among the deviant or mentally disordered. Guion and Gottier (1965) found that tests developed for specific purposes were more predictive of

performance than tests scored with standardised algorithms. Personality tests designed to measure "normal" behavioural traits are likely to improve the development of logical links between job requirements, personality measurement, and performance (Rosse, Miller, & Barnes, 1991).

During the last decade two developments have lead some researchers to re-evaluate the potential validity of personality tests when selecting personnel. First, there is increasing agreement among personality theorists and researchers alike that personality can be organised and classified within a 'big five' structural framework, also labelled the five-factor model (Norman, 1963). This has provided a useful taxonomy in which to identify consistent and meaningful relationships between personality traits and performance criteria for different occupations. Secondly, the techniques of meta-analysis, which Barrett (1992) coined the first wonder of personnel psychology, have recently been applied to new reviews of personality and job performance.

The five-factor model of personality is based upon peer ratings using ordinary trait vocabulary (Digman, 1990; Norman, 1963). While a number of researchers have claimed to successfully identify a larger number of major personality traits, these five traits or dimensions have proved to be replicable over different theoretical frameworks, using different instruments, and with ratings obtained from different sources, a variety of samples, and with a high degree of generality (Barrick & Mount, 1991; Conn & Ramanaiah, 1990; Costa & McCrae, 1990; Goldberg, 1990).

These 'big five' have traditionally been labelled Neuroticism (vs. emotional stability), Extraversion (or surgency), Openness to experience (alternatively viewed as culture or intellect), Agreeableness, and Conscientiousness (or dependability). In brief, Neuroticism is the inclination towards expressing anxiety, anger, depression, and other negative affects. Extraversion is marked by sociability, energy, and a buoyant frame of mind. Openness is characterised by objectivity, need for variety, and curiosity. Agreeableness is a tendency towards altruism, trust, and sympathy, and Conscientiousness is characterised by self-

discipline, order, reliability, and foresight. The 'big five' dimensions are relatively independent of cognitive ability measures (McCrae & Costa, 1987), and while not without controversy (Hershon & Gorsuch, 1988; Hough, 1992) the five-factor model provides a meaningful taxonomy of traits comprising five relatively independent dimensions with associated sub-factors.

Hunter and Schmidt (1990) and colleagues (cf. Schmidt, Hunter, Pearlman & Hirsh, 1985) have presented persuasive evidence that both disputes the situation-specificity hypothesis and increases the validity of psychometric tests by accounting for the attenuation of results due to statistical artifacts. The primary conclusion for personnel selection is that cognitive ability generally predicts job performance better than other predictors, therefore, it is the most cost-effective construct worth measuring when selecting staff. Even with fully corrected validity coefficients, however, a great deal of criterion variance remains unaccounted for by cognitive testing.

Personality tests tap into performance variance beyond that which can be explained by cognitive tests alone (Driskell, Hogan, Salas, & Hoskin, 1994; Guion, 1987; Rosse et al., 1991). In a small sample of accountants, Day & Silverman (1989) found that three personality scales were significant predictors of performance, even after partialling out cognitive ability, while Schippman and Prien (1989) also found support for personality as a predictor of performance among managers. In one of the few studies to include both personality and ability measures McHenry, Hough, Toquam, Hansom, and Ashworth (1990) found two out of five military performance criteria (personal discipline and physical fitness/military bearing) were better predicted by personality and temperament than ability, as measured by the Armed Services Vocational Aptitude Battery.

Barrick and Mount (1991) used multiple criteria and multiple occupational groups in their review of the 'big five' and job performance. They found Conscientiousness to be a valid predictor of performance across criterion type and occupational group (estimated true  $r = .22$ ), while results for the remaining factors varied depending upon the specific occupation and criterion used. Extraversion was found to be a valid predictor for managers and sales occupations (both involving social interaction) across performance criterion, and along with Openness was a valid predictor for the criterion of training proficiency across occupations. Tett, Jackson, and Rothstein (1991), however, using a confirmatory approach to study selection, found the highest corrected mean validity of the "big five" to be for Agreeableness (.33).

Inconsistencies in research findings highlight the need for precise and differentiated research on personality-job performance links (Goldberg, 1993; Lord, De Vader, & Alliger, 1986). The poor validity of many job performance measures, and summarising of criterion-related validities across either predictor or criterion constructs, obscures the usefulness of personality scales (Hough, 1992). Furthermore, the relationship between personality and performance is susceptible to the moderating variables of performance criterion and job type (Barrick & Mount, 1991;

Hulin, 1962; Nathan & Alexander, 1988; Tett et al., 1991).

While the five-factor model and meta-analysis have demonstrated the usefulness of personality for selection, the 'big five' themselves may in fact be too broad to have predictive usefulness among job applicants (eg. Briggs, 1989; McAdams, 1992). Hough (1992) found nine factors to be more appropriate than the "big five" whereas Mershon and Gorsuch (1988) found evidence for 16 factors. Saville, Nyfield, Sik, and Hackston (1991; cited in Schmit & Ryan, 1993) found specific facets of the 'big five' constructs were better predictors than the broader global measures (eg. Conscientiousness), as did Driskell et al. (1994).

Schmit and Ryan (1993) have identified an "ideal employee" factor based upon work-related facets, further suggesting that the 'big five' model may be inappropriate for personnel selection. Their ideal employee factor (Conscientiousness-plus) included mainly Conscientiousness items but also items from the other four broad dimensions. Personality tests designed to measure middle-level traits within the big five (John, 1990) may better account for different personality requirements between occupational groups (Schmit & Ryan, 1993) than instruments designed to only assess the broader 'big five' dimensions.

The appropriateness of whether occupational psychologists should measure carefully a single narrowly defined variable or undertake a less detailed exploration of many separate variables is the bandwidth-fidelity debate (Cronbach & Gleser, 1965). Traditionally, the focus of this discussion in personality assessment for personnel selection has been whether broadly defined traits are better predictors of behaviour than narrowly defined traits. As Ones and Viswesvaran (1996) state, however, this has somewhat distracted the issue into an either/or debate. There is nothing about broad traits that precludes prediction of narrow behaviours, or vice-a-versa.

The level of specificity required in personality assessment for personnel selection depends on the question and requirements asked of the assessment process. On this basis alone it is doubtful if an analysis of the *overall* validity of personality is meaningful (Schmitt, Gooding, Noe, & Kirsch, 1984). Prediction and explanation of broad-based behaviours would require adequate breadth in assessment tools. Conversely, if the identification of narrow characteristics are the express purpose as with developmental interventions for example, higher fidelity would likely be more suitable (Hogan & Roberts, 1996).

Personality traits are likely to be differentially relevant depending upon the specific job requirements (Campbell, McHenry, & Wise, 1990). The use of narrow work outcome criterion in research may misrepresent the usefulness of personality for selection. An extensive and objective job performance criterion that encompasses many aspects of performance would provide a more accurate reflection of performance and be less susceptible to bias (Nathan & Alexander, 1988).

The present study compares the predictive validity of narrow middle-order traits (NEO PI-R facet scales) versus

broader higher-order traits (the "big five") for performance using a sample of police recruits, and investigates whether the 'big five' add significant incremental validity to a test of cognitive ability.

## Method

### Participants

Police recruits (n=284) from the Royal New Zealand Police College (RNZPC) who had completed their six month basic police training during 1995 were used for this study. Of these recruits 66% were male and 82% caucasian, with a mean age of 28.

### Measures

The NEO Personality Inventory - Revised (NEO PI-R; Costa & McCrae, 1992), has been reviewed as one of the best measures of the five-factor model developed to date (Briggs, 1992). The NEO PI-R measures the 'big five' factors of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness and also 30 middle-order personality traits (six middle-order traits embedded within each of the 'big five' factors) designed to identify individual variability within the larger "big five" personality factors.

The NEO Personality Inventory - Revised consists of 240 items that define 30 eight-item facet subscales over the five dimensions. Item factor analysis recovered the five domain scales when five varimax factors were extracted with correlations of .91, .89, .95, .95, and .89 for N, E, O, A, and C respectively. After varimax rotation all facets have their highest loading on the intended factor with factor loadings between facet scales and their appropriate domains of between .49 and .81. Coefficient alpha's for the Form S (and Form R) domain scales remain high at .92 (.93), .89 (.90), .87 (.89), .86 (.95), and .90 (.92) respectively for N, E, O, A, and C. Coefficient alpha reliability's for the 30 facet scales range from .56 to .81 for Form S and from .60 to .90, and are adequate when considering their 8-item length.

The NEO PI-R has comprised part of the psychological test battery for New Zealand Police selection since 1 April 1996. Study participants formed part of the validation cohort used by Police prior to this implementation.

The PI/Pq Higher Test (New Zealand Revision), is a commercially available cognitive ability test developed by the Australian Council for Educational Research (De Lemos, 1988), designed to assess verbal and numerical reasoning in adults who have completed their secondary school education. It has formed part of the psychological test battery for selection into the New Zealand Police since 1990. Kuder-Richardson formula KR-20 has been reported at .92 and .91 for two samples of school students (ACER, 1981), and alternate form reliability with the ACER Higher Test ML/MQ is reported at .90 (ACER, 1981) and .81 (Dugdale, 1999). Adequate criterion-related validity is reported with scholastic achievement and other tests of general mental ability (ACER, 1981) such as the ACER Advanced Test B40 ( $r=.80$ ,  $n=102$ ). Test scores are interpreted after transformation into stanines. Stanines divide scores into

nine levels determined by a normal distribution with a mean of 5.0 and a standard deviation of 2.0.

Performance was measured by the total score obtained in 17 practical (eg. self-defence, firearms) and academic (ie. paper and pencil) tests completed by police recruits during the 22 week basic training at the Royal New Zealand Police College (RNZPC). Test scores were obtained on some of these 17 measures as examples of narrow criterion, compared to overall performance as a broad criterion. These skills and knowledge areas include police law and procedure, social science skills training, physical education and self-defence, firearms, driving, and computer studies. The mean overall performance score for the study sample was 833 out of a possible 1000 (Sd = 42).

**Table 1** Summary data for higher-order and middle-order personality traits of the NEO PI-R, cognitive ability, and performance

	Mean	SD	Skewness	Kurtosis
NEUROTICISM (n=290)	74.76	18.42	-.10	.55
Anxiety (N1)	13.97	4.16	-.05	.19
Angry Hostility (N2)	10.56	3.89	.54	.69
Depression (N3)	11.61	4.45	.32	-.06
Self-Consciousness (N4)	14.53	4.15	.05	.27
Impulsiveness (N5)	15.43	4.30	.10	.15
Vulnerability (N6)	8.71	3.41	-.09	-.01
EXTRAVERSION	123.30	15.71	.01	-.11
Warmth (E1)	23.81	3.35	-.34	1.00
Gregariousness (E2)	19.42	4.20	-.27	.42
Assertiveness (E3)	17.43	4.43	-.23	.42
Activity (E4)	19.19	3.73	.05	.51
Excitement-Seeking (E5)	20.61	4.12	-.01	-.29
Positive Emotions (E6)	22.74	4.05	-.30	.12
OPENNESS	111.94	15.74	.19	.23
Fantasy (O1)	16.89	4.31	.01	.23
Aesthetics (O2)	15.82	5.65	.09	-.45
Feelings (O3)	21.17	3.66	.01	-.05
Actions (O4)	17.50	3.86	-.06	-.45
Ideas (O5)	18.29	4.81	-.08	-.11
Values (O6)	22.20	3.41	-.29	1.36
AGREEABLENESS	124.00	14.62	-.09	.65
Trust (A1)	20.14	3.93	-.56	.19
Straightforwardness (A2)	20.73	4.49	-.25	-.13
Altruism (A3)	24.47	3.12	-.06	-.14
Compliance (A4)	18.58	3.92	-.17	.64
Modesty (A5)	19.48	3.98	-.13	-.02
Tender-Mindedness (A6)	20.59	3.16	-.01	.45
CONSCIENTIOUSNESS	125.05	18.60	-.09	.39
Competence (C1)	22.45	3.50	-.24	.09
Order (C2)	18.84	4.26	-.08	.49
Dutifulness (C3)	23.42	3.8	-.12	.08
Achievement Striving (C4)	20.67	4.09	-.15	-.04
Self-Discipline (C5)	21.59	4.32	-.31	.03
Deliberation (C6)	18.25	4.24	.05	.37
PL/PQ (n=285)	6.34	1.39	.36	-.74
Performance (n=286)	832.89	41.84	-.24	.21

**Table 2** Pearson Correlation matrix between PI/Pq, higher-order personality traits (the 'big five'), and police recruit performance

	N	E	O	A	C	PI/Pq
Neuroticism (N)						
Extraversion (E)	***-0.25					
Openness (O)	**-.0.16	***0.38				
Agreeableness (A)	***-0.31	*0.13	0.07			
Conscientiousness (C)	***-0.52	***0.27	0.10	***0.34		
PI/Pq	*-0.13	0.02	***0.28	-0.09	0.03	
Performance	**-.0.16	**0.16	0.10	0.11	***0.27	***0.33

\*\*\*=p<.001, \*\*=p<.01, \*=p<.05, n=284

**Procedure**

During the first month of police basic training all participants completed the NEO PI-R. All participants were informed prior to completing the NEO PI-R, that they would receive confidential feedback, and that their personal results would be used for research purposes only and not to assess their job performance or suitability while undergoing police training. Upon completion of the 22-week basic training course the performance score achieved during basic training, and the pre-entry cognitive test score, (PI/Pq) was obtained for each participant.

Thirty-six predictors exist in this study (5 higher-order traits, 30 middle-order traits, and one cognitive ability test score). Data was analysed using SPSS 8.0.

**Results**

Summary data for all measures in the current study are presented in Table 1. The PI/Pq cognitive ability test and the broader higher-order trait of Conscientiousness were found to possess the highest correlation with overall training performance (Table 2). Of the broader higher-order traits, only Openness and Agreeableness were found to possess no significant correlation with performance. Neuroticism was the only higher-order trait to have a negative correlation with performance.

Correlations between the 30 narrow middle-order traits of the NEO-PI-R and overall training performance are illustrated in Table 3. Significant correlations with performance were found for the traits of Self-discipline, Activity, Ideas, Competence, Achievement Striving, Dutifulness, Order, Assertiveness, Trust, Impulsiveness, Vulnerability, and Deliberation. Of note is that all six narrow middle-order traits within the 'big five' dimension of Conscientiousness were correlated with performance. When comparing the use of broad (higher-order) versus narrow (middle-order) personality traits using a broad criterion, three of the 'big five' were found to significantly correlate with training performance (Table 2) compared to 12 of the thirty narrower, middle-order personality traits (Table 3).

Correlations with a range of narrow performance criterion, comparing broad (higher-order) versus narrow (middle-order) personality traits, are presented in Table 4.

**Table 3** Pearson Correlation matrix between middle-order personality traits and police recruit performance

	Performance
Anxiety (N1)	-.10
Angry Hostility (N2)	-.11
Depression (N3)	-.12
Self-Consciousness (N4)	-.07
Impulsiveness (N5)	**-.17
Vulnerability (N6)	**-.17
Warmth (E1)	-.02
Gregariousness (E2)	.05
Assertiveness (E3)	**-.19
Activity (E4)	***.24
Excitement-Seeking (E5)	.07
Positive Emotions (E6)	.07
Fantasy (O1)	.02
Aesthetics (O2)	.01
Feelings (O3)	.06
Actions (O4)	.05
Ideas (O5)	***.24
Values (O6)	.05
Trust (A1)	**-.18
Straightforwardness (A2)	.07
Altruism (A3)	.06
Compliance (A4)	.06
Modesty (A5)	.02
Tender-Mindedness (A6)	.01
Competence (C1)	***.23
Order (C2)	***.20
Dutifulness (C3)	***.21
Achievement Striving (C4)	***.22
Self-Discipline (C5)	***.25
Deliberation (C6)	*.14

\*\*\*=p<.001, \*\*=p<.01, \*=p<.05, n=284

The narrow performance criterion chosen for the current study reflected a variety of training requiring divergent skills and abilities of police recruits. The narrow criterion chosen were Scen1, Scen2 (practical scenarios 1 and 2), Comp (computer skills), Dri (driving skills), Exam1, Exam2 (major written examinations 1 and 2), Fire (firearms skills), PSpeak (public speaking), and PTSD (physical training/self-defence). Of the 45 correlations between the broad higher-

**Table 4** Pearson Correlation matrix between higher-order personality traits (the "big five"), narrow middle-order personality traits and narrow police recruit performance outcomes (n=286)

	Scen1	Scen2	Comp	Dri	Exam1	Exam2	Fire	Pspeak	PTSD
NEUROTICISM	**-.17	*-.14	-.08	-.08	**-.19	-.11	.02	-.03	.01
EXTRAVERSION	*.15	**-.20	-.01	.07	.04	.05	-.06	.09	*.13
OPENNESS	*.12	.08	.06	.07	.06	.09	-.11	.09	-.07
AGREEABLENESS	-.01	.11	.03	.07	.08	*.12	-.10	.04	-.03
CONSCIENTIOUSNESS	**-.27	**-.17	*.13	.11	**-.23	**-.22	-.03	.06	.04
Anxiety (N1)	*-.12	-.11	-.09	-.08	*-.14	-.01	.02	-.02	.01
Angry Hostility (N2)	*-.12	-.11	-.04	-.09	*-.14	-.10	.05	-.04	.00
Depression (N3)	**-.17	**-.18	-.01	-.02	*-.14	-.10	.02	-.04	.04
Self-Consciousness (N4)	*-.12	-.08	-.05	-.06	-.10	-.06	.04	-.03	.05
Impulsiveness (N5)	-.10	-.03	-.08	-.06	**-.20	*-.13	-.05	.02	-.08
Vulnerability (N6)	**-.20	**-.18	-.08	-.05	*-.15	*-.12	-.01	.09	.04
Warmth (E1)	.09	.11	.01	.01	.01	-.04	**-.18	.09	-.04
Gregariousness (E2)	.07	*.13	-.07	.02	-.03	.01	-.06	-.04	.04
Assertiveness (E3)	**-.23	*.15	.08	.06	.10	.09	.05	.07	*.15
Activity (E4)	**-.18	**-.18	.06	.01	*.13	*.13	.00	.11	**-.23
Excitement-Seeking (E5)	-.06	.11	-.02	.11	-.09	-.03	.03	.06	**-.18
Positive Emotions (E6)	.08	.11	-.03	.07	.04	.02	*-.13	.07	-.05
Fantasy (O1)	.00	-.05	-.01	-.03	-.09	.01	.01	.04	.01
Aesthetics (O2)	.09	.05	.00	.02	.02	-.04	-.11	.10	-.06
Feelings (O3)	.04	.06	.06	.07	-.01	.10	-.05	*.14	-.11
Actions (O4)	.03	.10	.05	.02	.11	.07	**-.19	.04	**-.17
Ideas (O5)	**-.17	**-.16	.10	*.12	**-.16	*.15	.00	.00	.11
Values (O6)	.08	-.03	.03	.04	.08	.04	-.04	.00	-.08
Trust (A1)	.11	.09	.00	.08	*.14	.11	-.01	.05	.11
Straightforwardness (A2)	.00	.08	-.01	.02	.04	*.15	-.09	-.02	-.09
Altruism (A3)	-.01	*.12	.04	.08	.03	.07	-.09	.08	-.06
Compliance (A4)	.02	.06	.02	.01	*.12	.02	-.07	.02	-.02
Modesty (A5)	-.06	.06	.05	.04	.03	.07	-.11	-.02	-.08
Tender-Mindedness (A6)	-.09	.02	.02	.05	-.09	.02	-.02	.07	.07
Competence (C1)	**-.29	**-.17	*.13	.09	**-.18	**-.17	.00	.03	-.01
Order (C2)	**-.26	.11	*.13	.06	**-.18	*.14	-.03	.08	-.01
Dutifulness (C3)	*.12	.07	*.14	.08	**-.20	**-.19	-.01	.02	.08
Achievement Striving (C4)	**-.18	**-.16	.02	.08	*.15	**-.17	-.06	.11	.09
Self-Discipline (C5)	**-.23	**-.18	.10	*.12	**-.20	**-.21	-.06	*.12	.04
Deliberation (C6)	**-.17	.08	.08	.07	**-.17	*.14	.03	-.09	-.03

\*\*\*=p<.001, \*\*=p<.01, \*=p<.05, n=284

order personality traits, 13 (29%) achieved a significant relationship with performance ( $p<.05$ ). Of the 270 correlations between the narrow middle-order personality traits, 64 (24%) achieved a significant relationship with performance ( $p<.05$ ).

The regression of multiple higher-order predictors upon performance is shown in Tables 5 and 6. Predictors were entered in order of the highest to lowest correlation with performance (Table 2). Of the four predictors entered – cognitive ability, conscientiousness, extraversion, neuroticism – only conscientiousness added significant incremental validity to the measure of cognitive ability used, attaining a multiple correlation of .42.

## Discussion

Both higher- and middle-order personality traits were found to be significantly correlated with the performance of police recruits at the Royal New Zealand Police College. Performance was found to be correlated to narrower middle-order traits from all of the 'big five' higher-order traits (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness). Police recruits who are reliable, dependable, determined, self-confident and goal-oriented; prefer to be busy; are willing to consider new ideas and perspective's; are forceful and assertive when required; possess a belief that society is generally honest and of good intention; possess a tolerance for personal frustration; and

**Table 5** Multiple Regression of cognitive ability and higher-order personality traits on performance (change statistics)

Predictors	R	R <sup>2</sup>	Adj R <sup>2</sup>	StdE	R <sup>2</sup> change	F change	df	df2	Sig. F change
(Constant), PL/PQ	.32	.11	.10	39.69	.11	33.42	1	283	0.000
(Constant), PL/PQ, C	.42	.17	.16	38.19	.07	23.78	1	282	0.000
(Constant), PL/PQ, C, E	.43	.18	.17	38.09	.01	2.44	1	281	0.119
(Constant), PL/PQ, C, E, N	.43	.18	.17	38.13	.00	.38	1	280	0.537

**Table 6** Multiple Regression of cognitive ability and higher-order personality traits on performance (coefficients)

Predictors	B	Std. Error	Beta	t	Sig.	Lower bound 95% conf. interval	Upper bound 95% conf. interval
(Constant)	10.98			70.15	.000	749.260	792.521
PL/PQ	.9	1.692	.325	2	.000	6.452	13.113
(Constant)	18.2			38.27	.000	662.445	734.284
PL/PQ	.48	1.62	.318	1	.000	6.366	12.777
C	.264	.8	.264	5.878	.000	.352	.829
	.121			4.876			
(Constant)	23.2			29.10	.000	630.134	721.553
PL/PQ	.21	1.62	.317	5	.000	6.340	12.735
C	.240	1.62	.240	5.871	.000	.290	.784
E	.088	.4	.088	4.277	.119	-.062	.538
	.126			1.562			
	.152						
(Constant)	33.1			19.93	.000	595.942	726.526
PL/PQ	.69	1.64	.321	5	.000	6.445	12.908
C	.259	1.64	.259	5.894	.000	.297	.864
E	.092	2	.092	4.030	.105	-.052	.554
N	.040	.144	.040	1.628	.537	-.197	.377
	.154			.618			
	.146						

are resistant to stress, are likely to be higher performers during training.

The broad higher-order trait of Conscientiousness possessed the strongest relationship with performance and both the higher-order traits of Neuroticism and Extraversion were correlated with performance in the direction expected. These findings are supported by Barrick and Mount (1991), who identified extraversion, emotional stability, agreeableness, and conscientiousness as being important personality factors for police performance across criterion type (estimated true correlations ranging from .09 to .22). Cortina, Doherty, Schmitt, Kaufman, and Smith (1992) using the MMPI and IPI to measure the 'big five' also correlated these factors with training success, peer ratings, probationary ratings, and turnover in a police sample. The current study found no support for a link between Agreeableness and police training performance. However, narrower middle-order traits from both Agreeableness and Openness were identified in this study as being related to performance, the latter having been linked by Barrick and Mount (1991) to training proficiency.

The police recruit sample used for this study was not a sample of job applicants, and applying these results in

terms of appropriate bandwidth-fidelity of personality measurement to other occupational contexts requires caution. Schmit and Ryan (1993) found that the five-factor model fitted a student sample but not a sample of job applicants. This may be due to measurement of the broad higher-order 'big five' alone, rather than middle-order traits embedded within the five-factor model, along with variable motivation for impression management. Selection of job applicants using personality tests should ideally include combinations of specific job relevant items or scales from each dimension of the 'big five'. As the current study illustrates, there may be little practical difference in using a large range of narrow personality traits or a smaller range of broad ones. Rather than bandwidth or fidelity, the issue for personality measurement in personnel selection is one of matching suitable personality traits to job content.

It is reasonable to expect that different personality traits are important within different occupational contexts (Bolton, 1985). This increases the importance of primary research across job type and job role, using middle-order and higher-order personality trait scales, with various criterion. The combination of higher-order (broad) and middle-order (narrow) assessment used in the current study

reveals links between personality and a variety of performance criteria, that would remain hidden using the 'big five' alone. The narrow focus on single traits in isolation from others has been criticised by Smith (1994), and Robertson (1993) has drawn attention to the possibility of complex rather than linear relationships between personality and job performance. For example, the influence of personality upon job performance at entry-level may change as an incumbent's career progresses either horizontally or vertically.

Pugh (1985), for example, found striving for status as the best predictor after 2 years but that after 4 years the best predictors of police job performance became that of a stable, responsible, and socially skilled individual. This suggests that early in a police career new recruits may focus upon fitting in with police culture (membership status) but that as their position stabilises police work becomes more important than status among colleagues. Unfortunately, police personality research tends to involve small sample sizes (less than 100) and the use of tests that are not easily comparable (eg. Hiatt & Hargrave, 1988; Pugh, 1985). Methodological constraints have made it difficult to determine what personality traits are related to police performance rather than a lack of predictive validity for personality per se (Hogg & Wilson, 1995).

The application of personality assessment to job performance is therefore likely to vary depending upon the requirements of the job and measurement factors. Conscientious employees are an asset to every organisation and the nature of police work, requiring extensive contact and interaction with the public, indicates the importance of elements within the dimension of Extraversion. Perhaps, also, the dimension of Agreeableness, which is the higher-order trait most reflective of cooperation and empathy. Neurotic individuals may become dissatisfied easily, have lower self-esteem, and be likely to perform less effectively under situations of stress (Little, Lecci, & Watkinson, 1992).

This study, using a broad job performance indicator, has demonstrated that personality traits based upon the broad 'big five' contribute incremental predictive validity when combined with cognitive ability measures. It also supports the benefit, when selecting personnel, of using the NEO PI-R and its combination of higher- and middle-order personality traits. Future research needs to examine the link between personality and narrower on-the-job performance measures, and whether the personality traits found to contribute to job performance as a recruit will remain valid predictors of job performance during a police career.

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