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The effects of faking on non-cognitive predictors of academic performance in University students

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ABSTRACT

This study examined the extent to which students could fake responses on personality and approaches to studying questionnaires, and the effects of such responding on the validity of non-cognitive measures for predicting academic performance (AP). University students produced a profile of an 'ideal' student using the Big-Five personality taxonomy, which yielded a stereotype with low scores for Neuroticism, and high scores for the other four traits. A sub-set of participants were allocated to a condition in which they were instructed to fake their responses as University applicants, portraying themselves as positively as possible. Scores for these participants revealed higher scores than those in a control condition on measures of deep and strategic approaches to studying, but lower scores on the surface approach variable. Conscientiousness was a significant predictor of AP in both groups, but the predictive effect of approaches to studying variables and Openness to Experience identified in the control group was lower in the group who faked their responses. Non-cognitive psychometric measures can be valid predictors of AP, but scores on these measures can be affected by instructional set. Further implications for psychometric measurement in educational settings are discussed.

1. Introduction

The recent drive for increased access to Higher Education (HE) in the UK, particularly for non-traditional students (Sinclair, 2003), has elicited interest in identifying the factors that predict academic performance (AP). Although scores at A-level are traditionally used by UK Universities, these only weakly predict future academic success (Huws, Reddy, & Talcott, 2006; Peers & Johnston, 1994). The use of non-cognitive measures as predictors of AP has been promoted (Conard, 2006) because these measures better predict AP at University for mature students than do previous academic results, particularly for students with non-traditional qualifications (McKenzie & Gow, 2004). Non-cognitive measures may also prove useful in discriminating between applicants in the upper tail of the distribution of academic success, where there is insufficient inter-subject variability to make admissions decisions on prior academic performance alone (O'Connor & Paunonen, 2007). Several studies have even proposed that personality tests alone could be used to predict AP, since the variance in AP accounted for by these measures overlaps substantially with that explained by traditional tests of cognitive ability (Chamorro-Premuzic & Furnham, 2003; Rindermann & Neubauerb, 2001). However Diseth (2003) concluded that the Big-Five may not account for as much variance in AP as approaches to studying, which is more specific to individual differences in a study context.

Behavioural tendencies associated with academic success may be captured by personality traits (Rothstein, Paunonen, Rush, & King, 1994). Personality and Approaches to Studying (see below) can be viewed as partially overlapping constructs (Blickle, 1996, Diseth, 2003) and such measures could prove to be more ecologically valid predictors of long-term AP than cognitive measures, because they relate more to individual intentions and behaviour, rather than to academic ability (Chamorro-Premuzic & Furnham, 2004). Non-cognitive measures may also help to circumvent the potential for social discrimination associated with University selection policies that are largely based on school AP alone. This potentially useful social leveling instrument would be reduced however if responses on non-cognitive measures could be coached to produce desirable applicant profiles. The potential for response faking on non-cognitive measures in these academic settings provides the overall motivation for this study.

Students with lower academic ability may optimize performance by developing learning strategies that are conducive to academic success (Furnham, Chamorro-Premuzic, & McDougall, 2003). The ways in which students approach learning tasks, and the influences that motivate their studying have been termed 'Approaches to Learning' (Biggs, 1993), a construct that has been augmented to encompass both the *intention* and the *process* of studying in 'Approaches to Studying' (Entwistle, 1997; see also Diseth & Martinsen, 2003). Generally, students who adopt a deep approach intend to understand the subject matter and are intrinsically

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motivated to learn, whereas those using a surface approach aim more toward simply reproducing learning material. Those who adopt a strategic approach tend to use the method they perceive as most likely to be successful in a given situation and are more achievement oriented. Approaches to Learning scores predict unique variance in AP (Diseth & Martinsen, 2003), including positive correlations with both the deep and strategic approaches and negative associations with a surface strategy (Newstead, 1992, Sadler-Smith, 1997). The predictive effects of the deep approach variable for AP have been inconsistent (Cassidy & Eachus, 2000; Diseth & Martinsen, 2003).

Studies relating Big-Five personality factors to AP have revealed positive correlations with Conscientiousness (e.g., Busato, Prins, Elshout, & Hamaker, 2000; Chamorro-Premuzic & Furnham, 2003; O'Connor & Paunonen, 2007; Paunonen & Ashton, 2001) and Openness to Experience (hereafter, 'Openness'; cf. Digman, 1997; De Fruyt & Mervielde, 1996; Rothstein, Paunonen, Rush, & King, 1994), negative associations with Neuroticism (e.g., Ackerman & Heggestad, 1997; De Raad & Schouwenburg, 1996), but inconsistent or null effects of Extraversion and Agreeableness.

Although non-cognitive variables can be valid statistical predictors of AP, the self-report nature employed in these measures makes them vulnerable to response distortion or 'faking', which would limit their practical utility in University admission procedures. Although many test batteries embed social desirability scales to identify respondent tendencies for self-enhancement, these measures can also be faked and provide no additional information about their true characteristics (Brown & Harvey, 2003; Pauls & Crost, 2004).

Most studies of faking on personality measures have employed either the NEO Personality Inventory (NEO-PPI) or the Five Factor Inventory (FFI) (Costa & McCrae, 1992; McCrae & Costa, 2004). Comparisons between applicants, incumbents, and with normative data revealed higher scores for Extraversion and lower scores for Neuroticism in applicant groups (Barrick & Mount, 1996). These results suggested that the responses of applicants may be distorted either by self-deception (i.e., when respondents genuinely believe their false responses are accurate) or impression management (i.e., deliberate response enhancement). Although the effects of faking may be variable across occupational contexts (e.g., Hogan, Barrett, & Hogan, 2007), respondents may attempt to match their personality profile to their perception of an ideal, or stereotypical personality for the specific job requirements (e.g., Furnham, 1990; Martin, Bowen, & Hunt, 2002; Paulhus, Bruce & Trapnell, 1995; Scandell & Wlazelek, 1999; Topping & O'Gorman, 1997). The likelihood of false responding can be modulated by instructional set (Bagby & Marshall, 2003; Pauls & Crost, 2005). However, while participants instructed to 'fake-good' can easily do so, the personality profiles of participants briefed to respond as job applicants are more likely to resemble those of honest respondents (Ryan & Sackett, 1987). What is difficult to ascertain is how valid the 'honest' responses were.

All of the Big-Five factors can be faked, with an average increase of approximately .75 SD between instructional conditions in repeated measures studies, and an average of .5 SD in between-group comparisons (Viswesvaran & Ones, 1999). Openness may be the most difficult to fake, whereas Conscientiousness is most easily faked (Furnham, 1997; McFarland & Ryan, 2000). Faking ability has even been proposed as an independent construct (Mersman & Shultz, 1998; Viswesvaran & Ones, 1999), related to factors such as social intelligence or cognitive ability (Pauls & Crost, 2005; McFarland & Ryan, 2000). The rationale for using non-cognitive measures to predict future AP would be reduced substantially if such measures highly overlap with those of cognitive ability.

The effect of response distortion on the external validity of non-cognitive measures as predictors of success in academic and occupational contexts is a contentious issue and is poorly understood. Some studies reported that faking reduced the predictive validity of such measures on AP (Peeters & Lievens, 2005); others show little or no effects of faking (Hogan et al., 2007; Ones & Viswesvaran, 1998). We therefore compared groups of honest responders with participants briefed to 'fake' on the Approaches and Study Skills Inventory for Students (ASSIST, Entwistle & Tait, 1996) and the NEO-FFI (Costa & McCrae, 1992), and measured the effects of faking on the ability of these measures to predict AP in University students. Our main research questions were: Is there a stereotypic profile of the ideal student applicant?; Are participants able to fake their responses in line with this profile?; and What are the effects of faking on the predictive validity of personality and approaches to studying measures for AP?

2. Methods

Data were obtained from first-year single and combined honours Psychology undergraduates at Aston University. All received course credit for their participation. One hundred and sixty-four students (130 females, 34 males) took part, the gender imbalance resulting from the high female to male ratio among students in our Psychology programmes. The participants were aged between 18 and 34 years of age (M (SD) = 19 (3)). Fifty-four participants (41 females, 13 males) were allocated to a condition in which they were instructed to complete personality and approaches to studying questionnaires under a 'fake' responding condition, with the remainder completing the measures under the standard protocol described below. This study formed part of a larger programme of investigations into widening participation in a University setting, and therefore there is a difference in sample size between the experimental and control groups.

2.1. Measures

All participants completed a demographic information form, the Raven's Progressive Matrices (RPM), the NEO-FFI, the ASSIST, a self-assessment profile, and an 'ideal student' profile in a single testing session. The NEO-FFI is a 60-item self-report inventory of the Big-Five constructs. Each item is answered on a five-point Likert scale. In this sample Cronbach's Alpha ranged from .60 (Openness) to .86 (Neuroticism) in the control group and .69 (Agreeableness) to .87 (Neuroticism) in the 'fake' group, consistent with norms for this measure (Costa & McCrae, 1992).

The Approaches and Study Skills Inventory for Students (ASSIST) was designed to measure tendencies for deep, surface and strategic approaches to studying in HE (Entwistle & Tait, 1996). It contains 52 self-report items, each scored on a five-point Likert scale. The reported internal consistency of the measures ranges from .80 to .87 (.81 to .88 in the current study).

Raven's Progressive Matrices (Raven, 1976) is a standardised assessment of non-verbal reasoning skill, used here to assess the potential meditating influence of cognitive ability on the predictive validity of the non-cognitive measures on AP.

The self-assessment and ideal student profiles were designed using seven-point Likert scales with five adjectives describing the extremes of each NEO factor, using Costa and McCrae's (1992) taxonomy. Students were first instructed to assess themselves on the profile, and were then briefed to complete an additional profile in-line with their perception of the 'ideal' University applicant. Correlations between the self-assessed

Table 1
Participant ratings on the Big 5 personality variables for both self-assessed and ideal-profiles.

Big 5 variable	Self-rating ($n = 164$)	Ideal-rating ($n = 164$)	Wilcoxon Z
	M, Mdn, (SD)	M, Mdn, (SD)	
Neuroticism	3.3, 3, (1.4)	1.7, 1, (1.1)	10.28**
Extraversion	5.3, 6, (1.4)	5.9, 6, (1.4)	10.47**
Openness to Experience	5.2, 5, (1.3)	6.2, 6, (1.1)	10.80**
Agreeableness	5.6, 6, (1.4)	6.2, 6, (1.1)	10.70**
Conscientiousness	5.2, 5, (1.4)	6.7, 7, (0.7)	11.00**

** $p < 0.01$.