Investigating Academic Dishonesty with Concrete Measures

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Abstract

Our recent research revealed two predictors of multiple-choice exam cheating: subclinical psychopathy and poor verbal ability. However, the extent to which individual difference variables predict plagiarism on term papers remains untested. Such research is now possible using the widely used plagiarism detector called Turn-It-In. We collected such objective measures of both plagiarism and multiple-choice cheating in a large undergraduate class (N = 328). The Turn-It-In program identified 20 percent of students as plagiarists. Results confirmed and extended our previous findings: Psychopathy and poor verbal ability predicted both multiple-choice cheating and plagiarism. Interestingly, they also predicted excessive quoting on papers. Recommendations for researchers and educators are discussed.

Introduction

Academic dishonesty remains a persistent problem for educators, with lifetime cheating rates as high as 80% (Robinson, Amburgey, Swank, & Faulker, 2004). However, recent statistical and technological advances have facilitated the detection of common forms of academic dishonesty. For example, the S-Check program assesses cheating on multiple-choice exams (e.g., Wesolowsky, 2000) and the Turn-It-In program assesses plagiarism on term papers (see Turnitin.com website).

Despite claims that individual difference predictors are of little value in explaining academic dishonesty (e.g., Whitley, 1999), results from our own recent research countered these claims (Nathanson, Paulhus, & Williams, in press). Using a concrete behavioral indicator of multiple-choice cheating across two studies, we found two consistent predictors: (1) Deficits in scholastic competence (e.g., poor verbal ability); and subclinical psychopathy, a less extreme variant of its clinical counterpart, (2) characterized by callousness and social deviance (Hare, 1991; Williams & Paulhus, 2004).

The present study aimed to replicate and extend our previous work by exploring whether these same associations would hold for the prediction of another form of academic dishonesty, namely, plagiarism. Although Turn-It-In provides an objective indicator of plagiarism, little research has been reported. Using an internet site, we collected myriad individual difference variables, including the Big Five (John & Srivastava, 1999), verbal ability, and the 'Dark Triad' of narcissism, Machiavellianism, and subclinical psychopathy (Paulhus & Williams, 2002). We predicted that subclinical psychopathy and poor verbal ability would again be significant predictors of our two current concrete measures of academic dishonesty, multiple-choice exam cheating and plagiarism.

Method

Participants. Participants were 328 students enrolled in two sections of an introductory psychology class at a large northwestern university. Sixty-three percent were women. Forty-seven percent were of East Asian heritage, 30% were of European heritage, and the remainder came from other ethnic heritages.

Procedure. Students were explicitly warned that the instructor would be watching for exam cheating and plagiarism. Of the 328 students, 107 completed our online battery of standard self-report individual differences measures. Students were not aware of any link between their course work and the personality study. All participants received course credit for participation in the latter.

Measuring cheating. To measure cheating on multiple-choice exams, we submitted students' answer sheets to the S-Check program. To minimize false positives, this program conducts pair-wise analyses of all students' responses while controlling for each student's ability, and computes other (potentially) corroborative indices. When plotted on a normal distribution, those pairs suspected of cheating tend to be clear outliers. Moreover, when compared against seating charts, these pairs are invariably seating adjacent (Nathanson et al., in press).

Plagiarism. To measure plagiarism, we submitted the students' two term papers to the Turn-It-In program (see Turnitin.com website). This website compares a submitted paper against the constantly updated entries in its comprehensive database. Items in this database range from previously submitted student papers to academic and professional articles. Each paper receives a percentage score that indicates how much of the paper directly matches sources in the databank.

Results

Our multiple-choice cheating program flagged 3% of students as potential cheaters. Plagiarism scores from Turn-It-In were used to categorize students as plagiarists or non-plagiarists using a cut-off score of 2% of their paper. This categorization yielded a higher rate of plagiarism (46.6%) on term paper 1 than on the second (20.9%) ($\chi^2 = 37.9$, $p < .01$). 20% of the students plagiarized on both papers. The correlation between plagiarism on Paper 1 and Paper 2 was $r = .27$ ($p < .01$).

The difference in the plagiarism rates might be explained by the different nature of the papers. Paper 1 was more scientific and would therefore require students to cite more sources to write their paper. Paper 2 was of a more personal nature and thus required less reliance on external sources. However, Paper 2 may in fact be a purer index of plagiarism because of its lower reliance on outside sources. If so, then our hypothesized correlations between individual difference predictors and plagiarism should be stronger on the second term paper.

Table 1 shows the correlations of our predictors with multiple choice cheating and plagiarism scores separately for the two term papers.

As predicted, multiple-choice cheating was significantly associated with psychopathy, $r = .20$ ($p < .05$, one-tailed), and poor verbal ability, $r = -.19$ ($p < .05$ one-tailed). These results are consistent with our previous research on individual difference predictors and multiple-choice cheating.

This pattern of associations also held for one set of plagiarism scores (Paper 2). As predicted, plagiarism was significantly associated with psychopathy, $r = .24$ ($p < .01$ one-tailed), and poor verbal ability, $r = -.25$ ($p < .01$, one-tailed).

On Paper 1, the associations were similar, but weaker: Psychopathy ($r = .13$) and poor verbal ability ($r = -.16$) were marginally significant predictors of plagiarism (both p's $< .10$, one-tailed).

To clarify how Turn-It-In computes plagiarism scores we took a closer look at the program output. Apparently, the program counts three distinct writing behaviors as plagiarism: (1) excessive quoting, (2) non-quoting, and (3) true plagiarism. *Excessive quoting* is the inclusion of large amounts of correctly quoted material. *Non-quoting* is the failure to add quotation marks around material that includes a citation source. *True plagiarism* is the failure to provide quotation marks or citations of a source recognized by Turn-It-In. The correlation between excessive quoting and non-quoting is $r = .16$ ($p < .01$), excessive quoting and true plagiarism is $r = .16$ ($p < .01$), and non-quoting and true plagiarism is $r = .15$ ($p < .01$).

For simplicity, we focused on the individuals who plagiarized on both papers. Using that criterion, the proportion of plagiarists engaging in excessive quoting, non-quoting, and true plagiarism were 13%, 5%, and 2% respectively (see Figure 1). Table 2 shows the correlations between our individual difference predictors and these components.

Our results with true plagiarism matched the Table 1 results for overall plagiarism scores. True plagiarism was significantly predicted by psychopathy ($r = .23$) and showed a trend with poor verbal ability ($r = -.14$). More surprising was that excessive quoting was also predicted by psychopathy ($r = .20$), along with a trend toward poor verbal ability ($r = -.15$).

Discussion

Based on concrete behavioral measures, multiple choice cheating and plagiarism on term papers were best predicted by psychopathy and poor verbal ability. The plagiarism results held even when the Turn-It-In scores were re-scored to yield true plagiarism rates. These results replicate and extend our previous research (Nathanson et al., in press).

Intriguing is our finding that psychopaths and those with poor verbal ability tended to use quotations to excess. Their impulsive and irresponsible personalities may encourage psychopaths simply to copy the quote directly instead of putting in the extra effort to paraphrase. Those with poor verbal ability may quote excessively because of a simple inability to paraphrase.

The Turn-It-In program identified 20% of students as having plagiarized on both term papers. Our pattern of individual difference results supports the program's claim to correctly identify plagiarists. When we used a more rigorous scoring procedure, however, the plagiarism rate was reduced to as low as 3%. In short, the program's current scoring algorithm may include many false positives.

Recommendations

Plagiarism on term papers appears to be reduced by assigning a personal rather than a scientific topic. Although we recommend the Turn-It-In program as a powerful tool for identifying plagiarism, educators and researchers would be well advised to interpret the scores with caution. When deciding whether to pursue suspected cases of plagiarism, we strongly suggest that the Turn-It-In output be re-scored to yield the true measure of plagiarism.

Conclusions

The admirable features of the Turn-It-In program include its large and constantly updated databank and its speed in estimating the originality of a paper. It is a necessary tool to counter the widespread fraudulent downloading of term papers from the internet. The program performs a task that is otherwise impossibly labor intensive. Our results support the use of Turn-It-In as a screening device. However the criteria for classifying students as plagiarists warrants additional research.

Our future research will investigate the cognitive processes that mediate the situational and personality determinants of academic dishonesty. For example, we

are currently exploring the motivations and deterrents that make some people more likely to cheat than others.

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Table 1

	Paper 1	Paper 2	Multiple-Choice Cheating
Extraversion	.21*	.06	.11
Agreeableness	-.03	-.14	-.11
Conscientiousness	.05	-.22*	-.04
Emotional Stability	.07	.10	-.06
Openness	-.03	-.11	-.11
Narcissism	.17	.15	.21*
Machiavellianism	.02	.08	.21*
Psychopathy	.13	.24*	.20*
Verbal Ability	-.16	-.25*	-.19*

* $p < .05$, two-tailed.

Table 2

	Excessive Quoting	Non-Quoting	True Plagiarism
Extraversion	.20*	.14	.07
Agreeableness	-.12	.15	-.20*
Conscientiousness	-.02	.06	-.07
Emotional Stability	.17	.03	-.03
Openness	.05	-.05	-.08
Narcissism	.03	.13	.12
Machiavellianism	.03	-.11	.14
Psychopathy	.21*	-.16	.23*
Verbal Ability	-.15	-.12	-.14

* $p < .05$, two-tailed.

Figure 1