

## Some Personality Correlates of Business White-Collar Crime

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On présente dans cet article les résultats de la première étude transversale européenne portant sur les dimensions de la personnalité en relation avec les délits financiers commis par les cols blancs. Ce travail est un prolongement de la recherche de Collin & Schmidt (1992) sur les délits des cols blancs aux Etats-Unis. Les données ont été récoltées auprès de 150 cadres en poste dans des sociétés commerciales allemandes et de 76 délinquants en col blanc anciennement cadres. Les répondants ont rempli des échelles papier crayon mesurant l'hédonisme (l'Echelle de Valeurs de Schwartz), le sens des responsabilités (NEO-FFI), le narcissisme (DSM-III-R), la désirabilité sociale (Crowne & Marlowe), et le self-control comportemental. L'analyse de régression logistique montra que 69% de la variance était commune aux deux groupes. Le délit financier commis par un col blanc dépend du sexe (les hommes sont surreprésentés), d'un faible self-control comportemental, d'un hédonisme élevé, d'un fort narcissisme et d'un sens des responsabilités affirmé quand la désirabilité sociale est statistiquement contrôlée. Ce résultat concernant le sens des responsabilités est toutefois en contradiction avec l'interprétation que Collins et Schmidt donnent de leurs travaux (1993). On peut supposer que les délinquants en col blanc haut placés combinent malhonnêteté et sens des responsabilités élevé.

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In this paper the results of the first cross-sectional study in Europe examining personality correlates of white-collar crime in business are presented. This study is an extension of Collins and Schmidt's (1993) research on white-collar crime in the United States. The data were obtained from 150 managers currently active in German corporations and 76 white-collar criminals who formerly held such positions. Participants filled out paper and pencil scales measuring hedonism (Schwartz Value Scale), conscientiousness (NEO-FFI), narcissism (DSM-III-R), social desirability (Crowne & Marlowe, 1960), and behavioral self-control. The logistic regression analysis accounted for 69 per cent of the variance between the two groups. Business white-collar crime is predicted by gender (males higher rates than females), low behavioral self-control, high hedonism, high narcissism, and high conscientiousness after statistically controlling for social desirability. The results concerning conscientiousness, however, contradict the interpretation of findings reported by Collins and Schmidt (1993). It is argued here that high-ranking white-collar criminals in business combine low integrity with high conscientiousness.

## INTRODUCTION

Across Europe, 42.5 per cent of larger companies have been the victims of economic crime. No industry sector is spared. The most prevalent cases of fraud are embezzlement and breach of trust. Schlegel (2003a, 2003b) presents a survey of criminological research on white-collar criminality, damage estimates, and definition attempts.

The following is the first German study and, to the best of the authors' knowledge, the first study in Europe to relate personality measurements, measurements of behavioral self-control, and a measurement of personal values to economic crime committed by persons holding high-level, white-collar positions in business.<sup>1</sup> This study is an extension of Collins and Schmidt's (1993) research on white-collar crime in the United States of America.

White-collar crime is non-violent crime for financial gain committed by means of deception. In the present study, the authors focused on high-level white-collar crime in business. When the authors say "high level" they indicate specifically those crimes committed by a corporate manager, a high-ranking technical specialist, an official representative of a corporation, or the owner of a corporation. Included in this term are both the possibility that the white-collar offender acted "self-servingly" to further private interests or the interests of a group of persons in a corporation and the possibility that the person may have acted on behalf of the corporation with the intention of protecting or enhancing the interests of the corporation.

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<sup>1</sup> Research approach, questionnaire, and design of the study were created and the data of the prison inmates were collected in the course of the diploma thesis of A. Schlegel (Schlegel, 2002), who was coached by the first author. We gratefully acknowledge the financial support of the data collection granted by KPMG, Frankfurt.

There are a number of explanatory approaches to white-collar crime in business from scientific fields outside of psychology. These include the rational choice approach in economics, the concept of individualism in sociology, the concept of narcissism in psychiatry, and the concept of behavioral self-control in criminology. Each of these, however, does have psychological implications. In the following, these psychological implications will be elaborated. After this step has been completed, the authors will turn to the study of Collins and Schmidt, which has been the first and only psychological study of the impact of personality on white-collar crime.

According to the economic theory of crime (Becker, 1974), if the rationally expected utility of the action clearly outweighs the expected disadvantages resulting from the action thus leaving some net material advantage, then every person will commit the offence in question. One of the many suppositions of this theory is that people generally strive for enjoyment and the fulfillment of wishes for material goods. The sociological theory of white-collar crime (Coleman, 1987) postulates that managers who commit economic offences live in a social setting, i.e. culture, in which a very high value is placed on material success and individual wealth. Both views are of the opinion that strong striving for wealth and enjoyment in some way contributes to economic crimes committed by managers.

Psychological research on values has shown that there are strong interpersonal differences with regard to the priority placed on different values independent of the situation in which one finds oneself. In a longitudinal study of values, Schmitt, Schwartz, Steyer, and Schmitt (1993) found that the largest proportion of variance of the value measures was attributable to stable individual differences in value priorities. People also differ in the amount of value they place on material things and the enjoyment of life.

People for whom material things and enjoyment generally possess a high value are called *hedonists*. Living in a culture in which a very high value is placed on material success and individual wealth can serve as one cause of strong hedonism. With this in mind, the first hypothesis (see Table 1) is that everything else being equal, the greater the degree of hedonism present in a business person, the greater the tendency to commit economic offenses.

Bromberg (1965) made use of psychiatric case studies and viewed the behavior of white-collar criminals in terms of narcissistic fantasies of omnipotence. He found that white-collar criminals displayed little guilt and identified with the ideal of achieving success at any price. The essential features of the *Narcissistic Personality Disorder* are a pervasive pattern of grandiosity, a need for admiration, and a lack of empathy (American Psychiatric Association, 1987). Hogan and Hogan (2001) identify several subclinical dysfunctional personality dispositions underlying managerial career derailments including subclinical narcissism. The second hypothesis

TABLE 1  
The Hypotheses

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*Hypothesis 1.* The greater the degree of hedonism present in a business person, the greater the tendency to commit economic offenses.

*Hypothesis 2.* The more diagnostic features of a Narcissistic Personality Disorder an individual in a high-ranking white-collar position exhibits, the higher the probability that this person will commit a white-collar crime.

*Hypothesis 3.* The lower the behavioral self-control of a person in a high-ranking white-collar position in business, the greater the probability that this person will commit a white-collar crime.

*Hypothesis 4.* The higher the rating of conscientiousness that a person in a high-ranking white-collar position gives himself, the lower the probability that this person will commit a white-collar crime.

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(see Table 1) postulates that the more diagnostic features of a Narcissistic Personality Disorder an individual in a high-ranking white-collar position exhibits, the higher the probability that this person will commit a white-collar crime.

The General Theory of Crime (GTC; Gottfredson & Hirschi, 1990) states that criminals lack behavioral self-control. Therefore, they tend to engage in criminal and analogous acts such as school misconduct, substance abuse, physical aggression, wastefulness, absenteeism and tardiness, reckless driving, social problem behavior, job quitting, or promiscuous sex. These behaviors are positively correlated among each other and they tend to be correlated over time. According to Gottfredson and Hirschi, low self-control is not the product of training, tutelage, culture, or positive learning of any sort, but of the failure to learn to control one's naturally occurring impulses as a child. Our third hypothesis (see Table 1) postulates that the lower the behavioral self-control of a person in a high-ranking white-collar position in business, the greater the probability that this person will commit a white-collar crime.

The lack of behavioral self-control in the subclinical sphere is also a feature of a psychological construct called psychopathy (Williams & Paulhus, 2004). However, lack of behavioral self-control and psychopathy are not identical. Central features of psychopathy also include thrill-seeking, low empathy, and low anxiety. Psychopathy is associated with different sorts of crime such as drug abuse, violent assault, and bullying, but it is not associated with white-collar crime (Williams & Paulhus, 2004, pp. 774–775). Therefore, psychopathy can be safely ignored in the attempt to predict white-collar crime.

In addition to these approaches outside the field of psychology there has been thus far only one psychological study that has dealt with white-collar

crime. Collins and Schmidt (1993) compared prison inmates incarcerated for white-collar offenses and individuals employed in positions of authority. In comparison with the latter, white-collar criminals displayed a greater tendency towards irresponsibility, a disregard for rules, high risk-taking, and unreliability. The best measure of this difference was a *personality-based integrity test*. Personality-based integrity tests (also referred to as *honesty scales*) use personality-scale-like items in the measurement of honesty. Aside from dishonesty, integrity scales are negatively correlated with counter-productive behavior at work such as violence, stealing, volitional absenteeism, and drug and alcohol abuse (Ones & Viswesvaran, 2001).

Unfortunately, at the time when our study was planned and conducted, no German integrity scale was available. However, Collins and Schmidt (1993, p. 308) summarised their findings concerning white-collar crime in the following way: The common theme running through the above findings appears to be “social conscientiousness”. Conscientiousness is a basic personality trait often measured by self-rating scales (Costa & McCrae, 1992). It includes attributes like striving for competence, order, fulfillment of duties, achievement, self-discipline, and deliberate action. The fourth hypothesis (see Table 1) postulates that the higher the rating of conscientiousness that a person in a high-ranking white-collar position gives himself, the lower the probability that this person will commit a white-collar crime.

To test these hypotheses, a cross-sectional study with two sample groups from the same hierarchical level in business was conducted. Sample One consisted of prison inmates from different correctional institutions in Germany who had been convicted of business white-collar crimes. Sample Two consisted of German corporate managers.

Both samples received the same questionnaire tapping hedonism, narcissism, conscientiousness, and behavioral self-control. To control response tendencies of the participants, a German version of Crowne and Marlowe’s social desirability scale (1960) was used. This sort of design was suggested by Gottfredson and Hirschi (1990) and was later used by Collins and Schmidt (1993). It permits the testing of intergroup variation.

## METHOD

### Participants and Samples

Sample One consisted of 76 male prison inmates from 14 correctional institutions in four German states who had been convicted of high-level white-collar crimes. With the assistance of the respective state authorities, 303 persons who formerly held high-level positions in business and had committed white-collar offenses as defined by the German Federal Office of Criminal Investigation (Bundeskriminalamt, 2004) were selected

for inclusion in the study. The inmates were given the opportunity to participate in the study on a voluntary basis. They were assured of their total anonymity and of the complete confidentiality of the information requested of them. One hundred and eleven individuals chose to fill out and return their questionnaires. One item on the questionnaire requested that the inmates divulge the crime of which they had been convicted and 35 inmates were excluded from further analysis because their responses to this question did not match the definition of high-level white-collar crime used in this study. Of the remaining 76 white-collar criminals, six were female. The mean age of the offenders was 46.8 years. They had been convicted of the following crimes: bribery, counterfeiting, embezzlement, forgery, fraud, fraudulent bankruptcy, smuggling, and tax evasion. The mean length of incarceration was 3.92 years, and the mean time served at the time of their responses to the inquiry was 1.83 years. Their mean income the year before they were imprisoned was €66,169. The mean financial damage they had caused was €1,888,842. Sample Two consisted of 150 managers working in various companies. The questionnaires were sent to 400 managers and 150 questionnaires were returned. Fifty-six of the respondents were female. The mean age of the managers was 44.1 years. The mean number of persons who reported to them was 23. Their mean yearly income was €105,000. They worked in the chemical, pharmaceutical, oil, service, banking, insurance, and mechanical engineering industries.

## Measures

To control the response tendencies of the participants, the German version (Lück & Timaeus, 1969) of the *Social Desirability* scale by Crowne and Marlowe (1960) was used. The German version has 23 items. Four of these items (nos 3, 5, 11, and 17) were not used because the meaning of these items is presumably different for someone in prison when compared with those respondents who are not. The response alternatives are “right” (1) or “wrong” (2). The higher the scale scores the lower the response tendency. *Hedonism* was tapped with the instructions and items from a German translation of the Schwartz values inventory translated into German by Schmitt et al. (1993). The higher the scale score, the more hedonism a person has shown in his responses. Unfortunately, at the time that the present study was designed and conducted, no German scale of subclinical *narcissism* was available. Thus, narcissism was tapped with a German translation of the diagnostic features of the Narcissistic Personality Disorder based on DSM-III (Wittchen, Schramm, Zaudig, & Unland, 1993). The higher the scale score, the greater the amount of narcissism a person evidenced through her responses. *Conscientiousness* was measured by the German

translation of the conscientiousness-scale by Borkenau and Ostendorf (1993) from the NEO Five-Factor Inventory (NEO-FFI) by Costa and McCrae (1992). Means, standard deviations, Cronbach's alphas, and correlations of the scales are presented in Table 2.

At the beginning of the study, no German scale of behavioral self-control was available, so the authors designed one. Four scenarios were presented to the participants in the study (Schlegel, 2002). Each of these four scenarios involved a description of a situation in which an actor had the opportunity to cheat a target. Participants were given the choice either to cheat (low self-control), not to cheat (high self-control), or to pursue a course of action between the clear cheating and not cheating options (compromise choice). The higher the score, the more self-control a person shows in his or her behavior. The lower the score, the less self-control a person shows. At a later point in time, the Retrospective Behavioral Self-Control scale (RBS; Marcus, 2003) was made available to us. The scale is based exclusively on an assessment of prior behavior with possible long-term negative consequences for the actor such as school misconduct, vandalism, substance abuse, physical aggression, wastefulness, absenteeism/tardiness, traffic violations, and social problem behavior. In addition to the two participant groups described thus far, the four scenarios, the RBS, a social desirability scale (Crowne & Marlowe, 1960), and a conscientiousness scale (Costa & McCrae, 1992) were also administered to a third sample of 171 managers. The aggregation of the behavioral choices over the four scenarios for each participant did not correlate significantly with either social desirability or with conscientiousness, but the less managers cheated with regard to their choices in the scenarios, the higher were their scores of behavioral self-control in the RBS ( $r = .20, p < .01$ ). This study,

TABLE 2  
Means, Standard Deviations, Cronbach's Alphas, and Correlations

	N	M	SD	Min.	Max.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) GRO	226	0.66	0.47	0.00	1.00							
(2) GEN	226	0.27	0.45	0.00	1.00	.31						
(3) BSC	225	10.38	1.56	4.00	12.00	.11	-.02	<b> [.62]</b>				
(4) HDN	222	4.01	1.27	1.00	7.00	-.21	.00	-.31	<b> [.77]</b>			
(5) NC	226	2.09	0.41	1.13	3.13	-.20	-.17	-.21	.22	<b> [.52]</b>		
(6) CS	226	4.15	0.52	2.41	5.00	-.17	-.06	.11	.08	-.10	<b> [.81]</b>	
(7) SOD	223	1.49	0.22	1.00	2.00	-.52	-.17	.14	-.02	.14	-.02	<b> [.78]</b>

Note: Cronbach's alphas in the diagonal (**bold** and brackets [ ]);  $r > .13$ ,  $p < .05$ ; GRO = Groups: 0 = criminals, 1 = non-criminals; GEN: 0 = male, 1 = female; BSC = Behavioral self-control; HDN = Hedonism; NC = Narcissism; CS = Conscientiousness; SOD = Social Desirability.

carried out for the purpose of validation, supports the suggestion that the aggregation of the behavioral choices over the four scenarios can be considered to be an indicator of behavioral self-control.

## RESULTS

A hierarchical logistic regression was calculated with SPSS 12.0 for Windows. The criterion was being or not-being a part of the white-collar criminal group. The predictors were Gender, Social Desirability, Hedonism, Narcissism, Conscientiousness, and Behavioral Self-Control.

In the first step, Gender was entered into the equation because gender is a basic biological and social category. In the second step Social Desirability was entered because it can be assumed that this response tendency influenced all other self-report measures. Thus, before entering the other self-report measures Social Desirability was statistically controlled. In the third step, the other predictors were entered into the equation separately. The data confirmed Hypotheses 1, 2, and 3. Contrary to Hypothesis 4, the  $\beta$ -weight of conscientiousness was significantly negative meaning that the conscientiousness score in the white-collar criminal group was higher than in the non-criminal group. In addition, in post-hoc analyses interactions between Social Desirability, Hedonism, Narcissism, Conscientiousness, and Behavioral Self-Control were tested. Two significant interaction effects were discovered: An interaction between Conscientiousness and Narcissism and an interaction between Social Desirability and Behavioral Self-Control.<sup>2</sup>

## DISCUSSION AND LIMITATIONS

In general, marked psychological differences were found between white-collar criminals and non-criminal managers. As Collins and Schmidt's (1993) study conducted in the United States already demonstrated, the psychological study of white-collar crime is indeed worthwhile. This conclusion was replicated in the present study conducted in Europe. Thus, the study of white-collar crime should not be restricted to economics, psychiatry, or criminology—psychology in general, and personnel psychology in

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<sup>2</sup> If Social Desirability was high, no significant regression slope for being a white-collar non-criminal or being a white-collar criminal (criterion) on Behavioral Self-Control emerged. However, if Social Desirability was medium (STB = .28,  $p < .05$ ) or low (one standard deviation below the mean), the standardised regression slope of the criterion on Behavioral Self-Control was .84 ( $p < .001$ ). If Narcissism was high, no significant regression slope of white-collar criminality on Conscientiousness emerged. However, if Narcissism was medium (STB = -.35,  $p < .01$ ) or low (STB = -.65,  $p < .001$ ), the standardised regression slope of the criterion on Conscientiousness was significantly negative.



particular, can also contribute to a better understanding of white-collar crime.

The first hypothesis was confirmed by the data (cf. Table 3): White-collar criminals were more hedonistic than non-criminal managers. This supports the idea that the more managers pursue pleasure and the enjoyment of their lives, the greater the probability that they will not resist the temptation in a situation in which they have the opportunity to make or protect money illegally.

Hypothesis 2 was also supported (cf. Table 3): Narcissistic tendencies were stronger in white-collar criminals than in non-criminal managers.

TABLE 3  
Hierarchical Logistic Regression on the Binary Outcome "Criminal (= 0)"  
versus "Non-criminal (= 1)"

<i>Variable</i>	<i>Unstand. beta-weights</i>	<i>Wald-<math>\chi^2</math></i>	<i>p &lt;</i>	<i>R<sup>2</sup></i>	<i><math>\Delta R^2</math></i>	<i>Hits % (percentage rounded)</i>
Step 1						
Gender (GEN)	1.94	17.94	.001	.15	.15	66
Step 2						
Social desirability (SOD)	-6.3	41.08	.001	.44	.29	79
Step 3 each predictor separately						
Narcissism (NC)	-1.00	4.91	.05	.46	.02	78
Conscientiousness (CS)	-.93	7.32	.05	.47	.03	80
Behavioral self-control (BSC)	.43	12.11	.001	.49	.05	77
Hedonism (HDN)	-.62	14.31	.001	.52	.08	81
Step 4 each predictor separately						
CS*NC	3.26	8.70	.01	.63	.04	83
SOD*BSC	-2.92	16.07	.001	.65	.06	84
Step 5 all predictors jointly						
Gender	2.58	13.73	.001			
Social desirability (SOD)	24.31	10.35	.01			
Hedonism (HDN)	-.70	11.32	.01			
Narcissism (NC)	-17.81	11.11	.01			
Behavioral self-control (BSC)	5.37	19.09	.001			
Conscientiousness (CS)	-10.54	11.76	.01			
SOD*BSC	-3.34	17.80	.001			
CS*NC	4.03	10.18	.01			

*Note:*  $R^2$  = Nagelkerke's variance explained. All predictors have one degree of freedom. The change in the beta-weights is due to the statistical context effect (Aiken & West, 1991). At each step of a hierarchical regression analysis each predictor is treated as if it was entered last in the series of the predictors. Thus, if the predictors are correlated (cf. Table 2), as the number of predictors increases from step to step, the beta-weight of a specific predictor changes from step to step.

As the present scale was designed for clinical populations and not for psychiatrically normal populations, there was a range restriction in the present sample: The possible range of the scale mean was 1 to 4. However, as Table 2 shows, the maximum score was 3.13 and the mean score was only 2.09. This range restriction probably caused the low alpha value of this scale. Thus, in future studies, when scales of subclinical narcissism are available, first, alphas will be probably much higher and second, the effects of narcissism will therefore be even more accentuated.

Hypothesis 3, which was drawn from the General Theory of Crime, found support in the data after controlling for the response tendency of Social Desirability (cf. Table 3). Non-criminal managers showed more behavioral self-control than white-collar criminals.

Contrary to the predictions of Hypothesis 4 the conscientiousness of the white-collar criminals was higher than that of the white-collar managers (cf. Table 3). The scale had good internal consistency in the present study, and has been extensively validated in the past (Borkenau & Ostendorf, 1993). In addition, Social Desirability was statistically controlled for.

At first glance this result seems to be at odds with the finding that white-collar criminals displayed a lower degree of self-control than non-criminal managers. However, Marcus (2003) was able to demonstrate that self-control measured behaviorally was more than merely one facet of conscientiousness. Behavioral self-control was, indeed, substantially correlated to impulsiveness and excitement seeking. Behavioral self-control also possesses a meaning that lies beyond the Big Five. When Marcus regressed his behavioral self-control scale on all 30 NEO-PI-R facets (Costa & McCrae, 1992)  $R^2$  was only .37.

One reason for the high conscientiousness values of the white-collar criminals might be that the operationalisation of white-collar crime used in the current study was based on the definition of economic crime as it is used in Germany (Bundeskriminalamt der Bundesrepublik Deutschland, 2004). This definition includes crime on behalf of the corporation with the intent of protecting or enhancing the interests of the corporation, i.e. corporate crime and organisational crime. This kind of crime was excluded by Collins and Schmidt (1993). However, this explanation does not fit the effects that would be attributable for the more self-serving type of white-collar crime. In addition, Collins and Schmidt not only excluded criminals offending on behalf of the organisation, but, as one reviewer pointed out correctly, also included a much broader set of convictions not restricted to high-level white-collar crime.

However, it is important to note that although Collins and Schmidt (1993, p. 308) termed the difference between white-collar criminals and non-criminals "social conscientiousness", they actually did not measure conscientiousness. Hence, Collins and Schmidt may have chosen the wrong

term to indicate the difference between white-collar criminals and non-criminals. This is in line with previous findings: Sutherland showed as early as 1949 that acts of white-collar criminals are often deliberate and require specialised knowledge as well as extensive training. Furthermore, to obtain a high-ranking white-collar position, educational persistence is often required. Bresser (1978), in an early psychiatric German study on white-collar criminals, found that they were highly persistent and goal-oriented. Thus, the high conscientiousness scores of the white-collar criminals actually fits in well with the picture of a rationally calculating business person pursuing both private interests and the interests of the corporation.

Thus, white-collar criminals need above average conscientiousness to enter executive positions, but how can the difference between them and non-criminal managers be explained? One possible explanation is that only a very high level of technical proficiency resulting from a high degree of conscientiousness makes a manager ready and willing to undertake a criminal act. Because of the high level of technical proficiency the criminal manager subjectively perceives a low risk of being detected.

Other points that should be briefly mentioned concern Social Desirability, income, and the gender proportion. The results show that it was very important to control Social Desirability as a response tendency. Social Desirability was higher in the responses of the white-collar criminals than in the responses of the managers. The reason for this might have been the fact that the criminals were contacted in prison with the help of the state authorities. In Germany, criminals can be released from prison on probation when two-thirds of their sentence has been served. Some criminals may have wanted to increase their chances of early release on probation by giving socially desirable answers. After controlling for this response tendency, the results show a meaningful pattern.

The annual income of the criminals when they were still managers was lower than the income of the active managers. This probably is partly accounted for by the lapse of time (the prisoners were already incarcerated for about two years) and partly by the fact that the legal proceedings against them usually took another two years. It is probable that in these two years before the actual sentencing, the business activities of the convicts were inhibited by the observation of the police and the public prosecutor's office. Thus, their income would have also stagnated or even been reduced through this time.

The proportion of females in the criminals was lower than in the non-criminals. So although the samples were not representative in this respect, this is in line with all previous findings both in the US and Germany (Benson & Moore, 1992; Bundeskriminalamt der Bundesrepublik Deutschland, 2004).

The present study has several limitations. First, it was not possible to control the conditions under which the participants worked on the survey.

While in the Collins and Schmidt study the first author met with the groups of incarcerated offenders at each institution, in this study the authors had no direct contact with the offenders; the communication took place exclusively by mail. For this reason, the authors were not able to control the conditions under which the participants worked on the survey. Second, in order to preserve anonymity, information concerning family status, educational level, job titles, the industries of their former companies, etc. of the criminals was not requested. Third, the authors are not in a position to separate post-hoc white-collar criminals who acted on behalf of their corporations, intending to protect or enhance its interests, from white-collar criminals in the sample who acted in a way that was immediately detrimental to their corporations. Fourth, like Collins and Schmidt, no random sample of white-collar criminals but only a convenience sample was available. In addition, a cross-validation of the results in another sample is needed. Fifth, the measure of behavioral self-control is not without problems. The convergent validity coefficient vis-a-vis an alternative measure of the same trait was not very high. Sixth, although the traits of human personality are relatively stable in terms of rank order stability (Judge, Higgins, Thoresen, & Barrick, 1999) critical life events such as incarceration may have a strong impact on personality. It was not possible to measure the personality dispositions before and after incarceration. Finally, the present study is concurrent and therefore does not necessarily indicate what the relationships might be for scores obtained from applicants to these types of positions. Therefore, at the present time the results of this study should not be used as a criterion for the selection of personnel (see Schlegel and Schwarte, 2003, for a different point of view).

It has already been noted that the best measure of the difference between white-collar criminals and non-criminals in the Collins and Schmidt (1993) study was an integrity test. Thus, it can be assumed that high-level white-collar criminals in business are characterised by low integrity *and* high conscientiousness. Further research is needed to test this hypothesis.

In addition, neither the analysis of the correlations nor the analyses of potential interaction effects between hedonism, narcissism, and behavioral self-control revealed a dark triad (Paulhus & Williams, 2002) of white-collar crime. It can be speculated that the prospect of material gains or the fear of financial losses including severe losses at the level of the corporation are the triggers of high-level white-collar crime in business. As the offenders highly value material welfare they are very susceptible to this kind of temptation. This is predicted by hedonism. In addition, white-collar crimes often require specialised knowledge as well as extensive training, which is predicted by conscientiousness. High conscientiousness leads to high technical proficiency, which leads to low perceived risk of being detected. The other personality dispositions of the

offenders may work additively such as high narcissism, low behavioral self-control, or low integrity.

In sum, the following conclusion can be drawn from this research: Psychological variables do discriminate between white-collar offenders and non-offenders. It can be speculated that in addition to high hedonism, low integrity and high conscientiousness are important features.

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