PSIHOLOGIJA, 2016, Vol. 49(2), 129–148
DOI: 10.2298/PSI1602129M

UDC 159.923.072.5

The investigation of the manipulation with scores on Amoral dimension of the HEDONICA inventory

Tatjana Mentus[1], Goran Opačić[2], and Goran Knežević[2]

[1]*University of Belgrade, Faculty for Special Education and Rehabilitation*
[2]*University of Belgrade, Faculty of Philosophy,*
Institute for Psychology, Department of Psychology

Faking on Amoral dimension of the HEDONICA personality inventory was incited by the context simulation instructions: fake good (S2), fake bad (S3) and be honest (S1). Simultaneously, under instruction S1, the scores of respondents were measured on the Amoral facets of Self-concept scale (GSC), the Balanced social desirability scale (BIDR) and the cognitive tests of the fluid (IT2, ALF and RM) and the crystallized (AL4, vocabulary and GSN) intelligence, supposed (Morality), or known from the literature, as possible faking determinants. The score differences on Amoral dimension facets were calculated for S2 and for S3 situations using as a baseline the score in S1 situation. The score differences between S3 and S1 situations (abbreviated as FB) were found to be larger than the ones between S2 and S1 situations (abbreviated as FG). This result indicated that a) Amoral is susceptible to faking, and b) in S3, rather than in S2 situation, respondents displayed higher tendency of faking, or in other words, they incline to make worse rather than good presentation of themselves. The Projection facet of Amoral was most sensitive toward faking. These differences are found to be correlated with the Morality dimension of Self– concept scale and the fluid intelligence factor, but not with the dimensions of Social desirability scale in both situation for almost all faking scores on Amoral facets. Only Brutality was not related to the Morality, and Viciousness was not related to the Gf. This indicated that the dimension Morality of the Self-concept scale is far more correlated with the Amoral dimension of the HEDONICA personality scale than with the Social desirability scale.

Keywords: faking, personality inventory, intelligence, self'-concept, social desirability

A number of researches confirmed that personality inventories based on the respondent's self-report are susceptible to score manipulation, or shortly, to faking (Galić, Jerneić, & Prevendar, 2008; McFarland & Ryan, 2000; Topping & O'Goorman, 1997; Viswesvaran & Ones, 1999). Faking, in this sense, according to McFarland & Ryan (2000), may be defined as „volitional

Corresponding author: mentus@fasper.bg.ac.rs

Acknowledgment. This work was supported by the Ministry of Education, Science and Technological Development of Republic Serbia, through the contract ON179018.

attempt at increasing one's score in personality assessment in order to obtain a desired outcome" (Griffith & Peterson, 2011), or „a deliberate set of behaviors motivated by a desire to present a deceptive impression to the world" (Ziegler, 2011). Like most other behavior, faking is caused by an interaction between person and situation characteristics" (MacCann, Ziegler, & Roberts, 2011). The possibility of manipulation with scores presents a problem in personality inventories applications, potentially reducing their validity. In order to minimize the interference of faking, much effort of researchers was invested in studies aimed to uncover main determinants/measures of faking. Among the "external" determinants the context (job application, recruiting, mental health testing) is obviously most important one. In experimental conditions, the context could be simulated by the instructions fake good (fake positively) or fake bad (fake negatively) (Holden & Book, 2010). Many of evidenced determinants belong to the internal/personal traits of respondents, some of which, selected for consideration in this study, are described in further subsections of this section.

Several strategies to eliminate faking effects were published in the literature. Burns and Christiansen (2011), through the repeated measures described several ways for their correction (raw difference scores, regression adjusted scores, response validity items, bogus items, overclaiming). The Social desirability scale BIDR (*Balanced Inventory of Social Desirable Responding*) (Paulhus, 1998) is primarily designed to detect and to assess the susceptibility to fake through its two dimensions: self-deception (SDE) (unwilling, unconscious dishonest responding) and impression management (IM) (deliberate dishonest responding). Alternatively, the MC-SDS (*Marlowe-Crowne Social Desirable Scale*) (Crowne & Marlowe, 1960) scale could also be used for this purpose. Mersman & Shultz (1998) examined the correlation between faking scores and social desirability scores under the instruction to fake good. They considered positive impression management as the correlation between Big Five scores under the instruction to fake good and to be honest. Their findings suggested that faking is not correlated with social desirability scores, which is controversial to majority of other studies.

Recently, the statements arose that the development of models of faking is necessary in order to minimize the faking effects in personality inventories (Tonković Grabovac & Jerinić, 2015; Ziegler, 2011)

Individual differences and faking

Personality tests aimed to investigate individual differences are the object of continuous theoretical debates and improvements in psychology, motivated mainly by their great practical importance in personnel selection in different public as well as private institutions and companies. The most commonly used instruments in personality assessment, NEOPIR (240) and NEOFFI (60) (Costa & McCrae, 1992) are based on five factor model of personality (Goldberg, 1993). Although substantial research on the lexical hypothesis supports five–factor model, more recent analysis indicate that they are not sufficient to explain

all variances of personality. That is how six-factor HEXACO model may be one of an appropriate way to describe personality in language groups outside Indo/ European family (Ashton & Lee, 2007).

Their susceptibility to faking is one of the significant concerns. Meta--analysis of faking is usually based on the use of Big Five model of personality, showing consistent agreement about the faking effects (Ziegler, 2011). It was found that faking can change rank order of scores with the greatest effect on some particular model factors, namely Neuroticism and Consciousness, with the effects sizes of –0.93 and 0.89 respectively (Viswesvaran & Ones, 1999). Considering narrow facets of Conscientiousness: Competence, Order, Duitfullness, Achievement striving, Self'-discipline and Deliberation (Costa & McCrae, 1992), Goffin and Boyd (2009) hypothesized that Dutifulness and Deliberation are negatively related to the motivation to fake, while that Achievement striving is positively related. Also, they hypothesized that narrow facets of Neuroticism, such as low Anxiety low Hostility and low Depression makes one less motivated toward faking, while Vulnerability makes respondents highly motivated toward faking. Impulsiveness defined as inability to control cravings and urges, is then in negative relation to the faking. Those who score low on Impulsiveness might have lower motivation to fake because they have more efficient control over the urge. Individual high in Social astuteness are described as manipulative of others, socially intelligent, and skillful at persuading others (Jackson, 1994). They perceieve themselves as more able to fool testing professionals with their faked responses. Also, Social astuteness is conceptually related to social skills in general, being found by Levashina and Campion (2006) as one component of ones capacity to fake during employment interviews.

According to Book, Holden, Strazyk, Wasylkiw, and Edwards (2006), people displaying high scores on psychopathy (PCL-R test) are more inclined and also more motivated to fake and, according to some other authors, even more successful in doing that (Edens, Buffington, Tomicic, & Riley, 2001; Lilienfeld & Andrews, 1996; McNeil & Holden, 2006). Book et al. (2006) found that the undetected fakers in fake good situation displayed higher scores on psychopathy than the detected fakers. Under the instruction to fake bad, they found no differences in psychopathy scores between successful and unsuccessful fakers. Under the instruction to fake bad Edens et al. (2001) also failed to find a difference in psychopathy scores between successful and unsuccessful fakers.

Intelligence and capacity for faking

Galić et al. (2008) examined the correlation between the personality scores on Eysenk' inventory (Eysenck & Eysenck, 1975), Social desirability (BIDR) and Intelligence in an applicant (i.e. competition) condition. They found that the dimensions Neuroticism and Extraversion of personality scale were positively correlated with SDE dimension of BIDR scale, while Psychoticism (from Eysenk's Invetory) was negatively correlated with both the IM dimension and the general factor of intelligence "g". In other words, among the social

desirability dimensions, only IM (Impression management), but not SDE (Galić et al., 2008) correlated with intelligence. Till now, there remained lack in literature data on the correlation between the scores on Impression management and the intelligence. Mesmer-Magnus, Viswesvaran, Deshpande, and Joseph (2006) found the correlation of scores on the dimensions Self-deception and Impression management of the Self-concept scale with the emotional intelligence (Law, Wong, & Song, 2004), as well as with the scores on Self-esteem scale (Rosenberg Self-Esteem scale). Mersman and Shultz, (1998) found that "g" was negatively correlated with the dimension Neuroticism under instruction fake good. In other words, the respondents with lower intelligence scores displayed higher tendency to present themselves lower-scored on Neuroticism. MacCan (2013) however tested whether is faking on HEXACO (Ashton et al., 2004) personality inventory correlated with intelligence. In this research, author used CHC theory definition of intelligence, by separating g onto Gf and Gc factors, which was not performed previously in faking examinations. They found that the faking is related to the Gc factor.

Morality and willingness for faking

The Morality dimension of Self-concept scale seems to be very important in faking behavior, however, there is lack of literature on empirical evidence about the correlation of Morality and faking on personality tests. Still, recent studies intending to propose theoretical models of faking on personality tests consider Morality as one of the important issues. Self-esteem could be defined as one of the element of Self-concept scale, because it is defined as an evaluative component of self-knowledge (Baumeister, 1993). Some recent studies (Brown, 1986) indicated that the respondents with high-scored self-esteem, rated themselves higher on personality dimensions, too. Krueger (1998) indicated that high self-esteem is influenced by deliberate self-enhancement. Narcissism, highly correlated with self-esteem, was found to be also correlated with the dimensions of social desirability and with the over-claiming (Emmons, 1984; Williams, Paulhus, & Nathalson, 2002). Recent studies (Lu & Cheng, 2011) indicated that Morality dimension of Self-concept scale measured by subscale of the Six-Factor-Self-Concept Scale (Stake, 1994) is associated with the Self-deception dimension of BIDR scale (Paulhus, 1998), but that the relation of this two constructs is indirect, mediated by the level of self-consciousness (measured by Self-Consciousness Scale; Scheier & Craver, 1985). Machiavellianism, personal trait which refers to individuals who are likely to behave in a cold and manipulative fashion (Paulhus & Williams, 2002) is related with motivation to fake because it is associated with a tendency toward lying and cheating (Snell, Sydell, & Leuke, 1999) and strategic self-presentation (Levashina & Campion, 2006; Mueller-Hanson, Heggestad, & Thornton, 2006). The individual difference that could influence one's motivation to fake, separated from the category of personality traits, is one's Moral code. McFarland and Ryan (2000) proposed that some individual simply believe that faking is wrong, regardless

of the circumstances, whereas others don't. Snell, Sydell, and Lueke (1999), put forth a similar argument. In terms of supportive empirical work, Robie, Brown, and Beaty (2007) provided evidence that the applicants motivated to honest response often do so because they feel it is morally wrong to fake. Goffin and Boyd (2009) separated Moral code from Dutifulness, considering that the first one may be result of indoctrination, while the second one is related rather to the disposition, and advised that both should be included in any model of faking.

The research problem

In Serbia, the HEDONICA personality inventory was designed for the purpose of applicant selection in the public sector (Knežević, 2008). Beside of modified dimensions of "Big five", the HEDONICA inventory contains additional three dimensions: Amoral, Impulsivity, and Disintegration (Knežević, 2008; Knežević & Opačić, 2011a). Amoral describes the susceptibility toward breaking of legal and social norms. The persons high-scored on this dimension, possess pronounced Machiavellianism and Brutality, Resentment and Sadism (Knežević, 2003; Međedović, Kujačić, & Knežević, 2012). The structure of this instrument is similar to the PCL/R psychopathy test (Hare, 1998), and correlates negatively to the Honesty dimension of HEXACO inventory (Ashton et al., 2004; Međedović et al., 2012). Comparing to the Big Five dimensions of personality, Amoral is strongly related to the Consciousness and to the negative pole of the Agreeableness (Međedović, 2012). According to the recent findings (Međedović et al., 2012), the dimension Amoral could be used for successful discrimination of criminal recidivists from the control groups. Therefore it seems to be reasonable to suppose that high score on Amoral dimension indicates inclination toward faking in testing situation.

Being relatively recently introduced in the practice, the HEDONICA inventory was not investigated thus far from the aspect of susceptibility to score manipulations. Thus, the research problem of this study is a) to measure the scores on Amoral dimension of HEDONICA inventory and its particular facets under various instructions, in order to estimate their susceptibility to faking, and b) to correlate the FG and FB score differences on Amoral to the scores of respondents on some other personal traits: Morality as a broader constructs of Self-concept scale, the Intelligence factors as well as the Social Desirability scale, in order to prove to which extent these traits act as faking determinants in this case.

Among other dimensions of HEDONICA inventory, the Amoral dimension was selected to be first examined because this dimension is related to the psychopathy, which is further, as Book et al. (2006) suggested, related to faking. The mentioned personality traits are taken in consideration because, as the literature survey shows, the corresponding scores displayed the correlation with faking scores during various personality examinations.

According to the studies initiated by Galić et al. (2008), the examination of the influence of social desirability, intelligence and self-concept scores on the faking abilities may be broadened over all other dimensions of personal inventories, which is planned to be topics of further studies.

Method

Participants

The research sample consisted of 237 freshmen at the University of Belgrade, Faculty of Special Education and Rehabilitation (percentage of female participants 82.7%; M_{age}=19.91; SD_{age}=1.62). To stimulate participation in the experiment, the students were awarded by extra credits in their course entitled Methodology of the research in Special Education and Rehabilitation.

Instruments

In this section, the instruments used in this study are described in more detail.

The HEDONICA personality inventory. HEDONICA (HEDONICA 4 PI R) (Knežević & Opačić, 2011a) is the personality test which is based on hierarchical model of relations of the eight broader personality dimensions: Amoral, Disintegration, Impulsivity, Neuroticism, Extraversion, Openness, Agreeableness and Consciousness. Participants rated 240 items on 5-point scale from strongly disagree (1) to strongly agree (5). There are eight domain scales, each with 30 items.

Amoral, selected for this study, presents the subscale of the HEDONICA inventory, measuring primary destruction toward others, motivated by frustration and brutality. This subscale consists of 4 facets: projection, brutality, resentment and viciousness, which are assessed by 30 items. Projection facet refers to the projection and rationalization of amoral impulses. Resentment refers to the hate. Brutality refers to the aggressive, brutal, violence behavior while Viciousness refers to the passive denial of moral action. Participants rated them on a 5-point scale from strongly disagree (1) to strongly agree (5). The results are obtained as a score on each of these four facets, and as the final total score (H). High score on this scale indicates the tendency of respondents to manifest destructive potential toward others, while lower score indicates the absence of this behavior (Knežević & Opačić, 2011a).

The Balanced Inventory of Social Desirability Responding (BIDR). The BIDR is 40-item questionnaire measuring primary two dimensions of social desirable responding: self-deception (SDE) and impression management (IM) (Knezevic, Radovic, & Perunicic, 2008; Paulhus, 1998). The scores on each item of the questionnaire were obtained on a Likert type scale (scoring from 1 to 5). The balancing means that each second item was recoded (keyed) in reverse direction. As the extreme responses, actually reflecting the social desirability, the responses 1 and 2 on negatively directed items, and responses 4 an 5 on positively directed items are counted. As per authors propositions, for SDE scale, one point for every '5' was added, while for IM scale one point for every '4' or '5' was added. The average score for the first 20 items was calculated, and it represents the SDE score. Then, the average score for the next 20 item was calculated, and it represents the IM score.

The General Self-concept scale. The GCS scale (Opačić, 1995) is a 100-item scale, measuring 10 broader self-concept dimensions: emotionality, rigidity, misanthropy, morality, externality, external look, social evaluation, physical strength, general competence and intellect. Each of the dimensions is assessed by 10 items of Likert type (scoring from 1 to 5). In this research only Morality dimension of GCS scale was used in order to examine its relations to other constructs, expecting on the basis of indirect literature evidences, that it may be a faking determinant. Morality is defined in GCS as one-s believes about the Bad and Good, about what is right or wrong in world.

Intelligence tests. Battery for testing intelligence consisted of KOG9 battery by Knežević and Momirović (1996), which is designed primary to estimate the effectiveness of the cognitive processing of information on the basis of cybernetic personality model (Wolf, Momirović, & Džamonja, 1992). From this battery, ALF7, AL4 and IT2 tests were used (Catell, 1971; Wolf et al., 1992).

IT2 (Gf) represents spatial speed test which served in the cybernetic model for assessing the effectiveness of figural processing. IT2 consists of 39 tasks which represent figure and the right angle. For each figure within four presented symbols the appropriate one has to be identified which represents the presented figure seen from the given angle (time limit for answer on this test was 4 min).

In addition to this, dictionary test, Raven progressive matrices, swaps test, triplet number test and letter counting were applied.

From *Raven progressive matrices* (Gf), 18 tasks from the standard and the revised version were used, having the best metric characteristics (Pallier et al., 2002; Stankov, 2000). For a 3x3 matrix with right-lowest segment missing, the respondents were asked to identify within the six presented symbols the appropriate one, which completes the presented uncompleted picture.

The swaps test (Gf) consists of 20 tasks (Stankov, 2000). In each task, the sequence of the three symbols was presented followed by the verbal instructions which the symbols supposed to be mentally replaced, and the respondents were asked to mark the final order of the symbols.

The triplet numbers test uses several arrays of three numbers as stimuli (Stankov, 2000). The respondents were asked to recognize the appropriate rule within the current array, the tasks in each next array being more complex than in the current one.

Letter counting consists of 22 tasks in which the respondents were asked to count the number of targeted letters within the sequences of 10 to 12 letters (Stankov, 2000). The tests were conducted regarding standard instructions and time limitations.

Dictionary test (Gc) consists of 56 multi-choice tasks assessing the general knowledge (Knežević & Opačić, 2011b).

ALF7 and *AL4* represent a verbal speed tests, which served in the cybernetic model for assessing the effectiveness of the serial processing. ALF7 consists of 39 multi-choice analogy tasks, while AL4 consist of 40 judgment tasks (the time limit for answer on both tests was 2 min).

Table 1 shows the reliability and descriptive statistics for the intelligence markers as well as the factor loadings and communalities from an exploratory factor analysis (EFA). Reliability was low for Letter Spotting test (.404), but acceptable for the others tests (.726 – .867). To obtain factor scores representing Gf and Gc, EFA was undertaken with principal axis factoring extraction and Varimax Rotation. This solution explained 50.3% of variance, with factor correlating at .825. The first factor had salient loadings on IT2, RM, and SWAT and therefore it is labeled by „Gf“ (the reliability of those latent factors is 2.99). The second factor had salient loadings on Dictionary, AL4 and ALF7 and therefore it is labeled by „Gc“ (the reliability of those latent factors is 1.29).

Table 1
Reliability, descriptive statistics and factor loadings for intelligence

	Reliability and descriptive statistics			Factor loadings and communalities		
	M	*SD*	α	*Gf*	*Gc*	h^2
IT2	21.59	5.849	.791	.876		.668
RM	12.54	3.200	.744	.822		.668
SWA	9.53	3.297	.794	.655		.512
LS	10.50	3.393	.404			.266
AL4	31.49	5.038	.829		-.888	.730
ALF	19.63	3.741	.844		-.808	.660

Note. M – means, SD – standard deviation, α – Cronbach's Alpha reliability coefficient, h^2 – communality.

The Letter Spotting did not load on any of factors, and also showed very low communality. In combination with low reliability, this indicates that the assessment was not a good measure of the intelligence in this population. The range of correlation for measuring Gf test was in a range from .115 up to .522, while for Gc tests ranged from .412 up to .552).

The procedure

As the instruments, the personality test, the Social desirability scale, the Self-concept scale and the intelligence tests were applied. The participants were asked to complete personality test in the three experimental situations in which they were instructed how to respond: honestly (S1), to fake good (S2), and to fake bad (S3). Under the instruction to respond honestly, beside personality test, participants were asked to replenish also the Self-concept questionnaire, Social desirability questionnaire and the intelligence tests.

The instruction for responding to the personality test questionnaire directed the three different situations. Under the honest situation (S1), the instruction presented to the participants was the following: This questionnaire consists of 240 items. Please, read each item carefully, and then give answer that describes you mostly. You don't have to think a lot about the item meaning. You will provide best if you give the answer that firstly came to your mind, after you are sure that you understood what item meant. Respond on each item. If you made a mistake, just sign again appropriate answer. Please give answers for all items. Do not miss any of them.

Under the situation S2 we considered the situation in which participants were instructed to fake their answers in the same 5 point Likert scale in order to present oneself better. The instruction was the following: Imagine that you are applying for a job that you consider to be very attractive and you will be likely to get it, and that wining the job depends only from the answers in this testing. Browse your answers in that way to maximize your chance for getting a job, presenting yourself in a best possible way.

Under the instruction S3 we considered the situation in which participants were instructed to fake their answers in the same 5 point Likert scale but in a bad way. The instruction was the following: Imagine that you are applying for a job that is non-attractive, and you do not wish to get it. Because social aid will be cancelled if you get this job, you don't have any other choice but to fake your answers to minimize your chance for getting it. So browse your answers presenting yourselves as bad as possible.

Respondents were tested three times in time sequences lasting for two weeks. In the first testing situation participants were instructed to respond honestly. The battery of intelligence test, personality test, self-concept scale and social desirability scale were presented to them. Two weeks later, personality test was given, and the respondents were divided into two groups, one of them was instructed to fake good, and the other was instructed to fake bad. Two weeks later, the procedure was repeated: the respondents were asked to complete personality test, but were instructed in diverse direction.

Results

The level of score manipulations on Amoral dimension and its particular facets

First problem of this study was to measure whether and, if yes, to which extent the respondents fake on the Amoral dimension as a domain, as well as on its facets, in instructed situations S2 and S3.

Table 2
Descriptive measures for scores on Amoral dimension and its facets in S1, S2 and S3 situations and the results of its comparison relative to the S1 one

	S1		S2		S3		*Cohens' d*		
	M	SD	M	SD	M	SD	F	d_s1-s2	d_s1-s3
Amoral	2.81	.628	2.33	.670	4.15	.596	487.6	.74	-2.19
Proj	3.03	.726	2.26	.822	4.39	.642	84.8	1.00	-1.99
Vici	3.17	.774	2.79	.796	4.06	.666	99.7	.49	-1.24
Res	3.00	.740	2.45	.774	4.09	.669	90.5	.73	-1.55
Brut	2.23	.722	1.90	.708	4.15	.660	207.1	.46	-2.64

Note. Proj=Projection, Vici=Viciousness, Res=Resentment, Brut=Brutality) in situations S2 (FG scores, light gray) and S3 (FB scores, heavy gray) M – mean value; SD – standard deviation; d – effect size, F – (F ratio) – significance of regression model. Degrees of freedom are identical, 1/179, for all rows.

To obtain the fastest answer to this question, we presented first the "ordinary" descriptive statistic table on Amoral as domain, as well as for its facets: Projection, Viciousness, Resentment and Brutality, with the means (M) and the standard deviations (SD) in three studied situations (honest responding, fake good and fake bad situations) (Table 2). In the applied ordinary repeated measures ANOVAs, the situations were the within-subject variables with three levels: S1, S2, and S3, where S1 served to play role of a baseline, while dependent variables were personality dimension Amoral and its facets. The corresponding effect sizes, expressed as Cohen's d values ($d_{S1\text{-}S2,}$ $d_{S1\text{-}S3}$)(Cohen, 1988) are also presented in Table 2. The effect sizes, according to the size criteria (Cohen, 1988), belong to medium and high ones, and indicate that one may expect large FG and FB score differences on Amoral facets. Thus further detailed analysis was performed, as will be presented in the section 3.2.

In light of the critique related to the effect of the order of testing (McCann, 2013) on the testing results, we conducted the analysis of the order effect by means of Mixed Anova Model. The within subject factor was defined with FG and FB scores on Amoral facets, while the order of testing was used as a between subject factor. The results of calculation: ($F_{sit}(2/177)=331.7$; $F_{sit\times order}(2/177)=.714$; $F_{facet}(3/176)=184.2$; $F_{facet\times order}(3/176)=.721$; $F_{sit\times facet}(6/173)=44.1$; $F_{sit\times facet\times order}(6/173)=3.45$; $p<.05$), indicated that the order of testing did not have significant effect in our study.

The correlation of FG and FB scores of Amoral facets to the score on Morality of the Self-concept scale, scores on SDE and IM dimensions of Social desirability scale and Gf and Gc intelligence factors

In order to explore in detail the main problem of the study, i.e. to answer to what extent the faking scores on Amoral dimension and its facets are related to the other constructs (e.g. Morality dimension of Self-concept scale, Social Desirability and Intelligence), we calculated first the FG and FB score differences on Amoral dimension facets. The score differences were calculated using the formula given by Burns and Christiansen (2011). According to this formula, the score in S2 (or S3) situation, reduced for the score in S1 one, was divided by

the maximum score in S2 (or S3) situation (5 for S2, and 1 for S3 one) upon subtraction of the score in S1 one. The absolute value of this fraction was the wanted score difference. In the SPSS software, this calculation is activated by the command: COMPUTE FGNR1 = ABS (FG1 –HEDD1) / (5– HEDD1). The FG and FB score differences on Amoral dimension facets were presented in Table 3, in light grey and heavy grey shadowed fields, respectively.

Table 3
Descriptive statistic measures and correlation coefficients of determinants of faking

	M	SD	Mor	Gf	Gc	SDE	IM	Proj_ s1-s2	Vici_ s1-s2	Res_ s1-s2	Brut_ s1-s2	Proj_ s1-s3	Vici_ s1-s3	Res_ s1-s3	Brut_ s1-s3
Mor	3.09	.65	.947												
Gf	-.03	.99	-.260**	-											
Gc	.03	1.01	.165*	-.425**	-										
SDE	3.23	.43	-.212**	.043	-.027	.893									
IM	3.08	.60	-.270**	.025	.069	.370**	.731								
Proj_s1-s2	.54	.28	-.219**	.187*	-.032	.052	.001	.598							
Vici_s1-s2	.44	.25	-.150*	.029	.076	-.071	.085	.226**	.526						
Res_s1-s2	.53	.27	-.266**	.205**	-.056	.059	.026	.415**	.351**	.426					
Brut_s1-s2	.62	.33	-.15	.111	-.040	.142	.089	.304**	.330**	.325**	.726				
Proj_s1-s3	.93	.59	-.261**	.290**	-.090	.112	.078	.292**	.065	.274**	-.001	.59			
Vici_s1-s3	.81	.53	-.178*	.093	-.047	-.031	.153*	.142	.347**	.225**	.175*	.339**	.639		
Res_s1-s3	.93	.55	-.319**	.167*	-.081	.145	.080	.191*	.117	.236**	.172*	.391**	.408**	.333	
Brut_s1-s3	1.43	.73	-.210**	.203**	-.065	-.010	.117	.255**	.151*	.173*	.178*	.449**	.403**	.365*	.622

Note. reliabilities in terms of Cronbachs Alphas are shown in the diagonal. Reliabilites were calculated by means of RTT10G program (Knežević and Momirović, 1996).

Assignations. Mor=Morality, SDE=Self-deception management, IM=Impression management) to FG (light gray) and FB (heavy gray) scores on Amoral facets (Proj=Projection, Vici=Viciousness, Res=Resentment, Brut=Brutality).

In addition to this, in the Table 3, the calculated score differences were correlated with the score on Morality dimension of the Self-concept scale (Mor), the scores on SDE and IM dimensions of BIDR scale, and the Gf and Gc intelligence factors, the last two being taken from the Table 1. The first two columns in the Table 3, present the descriptive statistic measures, and the remaining columns present the correlation coefficients. From the Table 3, some interesting findings could be observed. First, both FG and FB score differences on Amoral are correlated to Morality and Gf factor. Then, Viciousness score is related positively to the Impression Management score. None of score differences on Amoral are related to the Self-deception, or to the Gc intelligence factor.

Further to this, exploring the effects of Morality on Social Desirability dimensions: Self-Deception and Impression Management, the regression analysis of determinants of faking on Amoral dimension facets was performed. The Morality, the Self Deception and the Impression Management, as well as the Gf and Gc intelligence factors were used as the independent variables, while FG

and FB score differences on Amoral facets were used as dependent variables. The question arises whether those independent variables indeed predict the FG and FB score differences on Amoral facets. In other words, faking score differences on Projection, Viciousness, Resentment and Brutality facets in fake good and fake bad situations were the criteria. Eight regression analyses were conducted. Linear regression with Enter method of introduction of predictors was used. The results obtained in terms of the standardized beta coefficients, and the t-test, with the markers of its significance, were presented in the Table 4.

According to the data presented in Table 4, one can perceive that the Morality dimension of Self-concept scale and the Gf intelligence factors are the determinants of score differences in faking on Amoral dimension facets. It is worth mentioning that Morality and Gf displayed greater prediction effect in the case of FB than in the case of FG score differences on Amoral facets. The Morality is highly related to the Resentment facet, having the highest level of beta coefficient. The FG score difference of Projection and Resentment facets correlate to the Gf factor with almost the same levels of impact. However, only the FB score of Projection facet correlates, at high impact level, to the Gf factor.

Table 4

Regression coefficients for prediction of the differences in scores on Amoral facets in FG and FB situations through the predictors Morality, Gf, Gc, SDE and IM

	Proj	s1-s2	Vici	s1-s2	Res	s1-s2	Brut	s1-s2	Proj	s1-s3	Vici	s1-s3	Res	s1-s3	Brut	s1-s3
	β	t	β	t	β	t	β	t	β	t	B	t	β	t	β	t
Mor	-.20	-2.50**	-.16	-2.04*	-.24	-3.06**	-.1	-1.23	-.19	-2.5*	-.14	-1.81	-.28	-3.62***	-.16	-2.02*
Gf	.17	2.03*	.04	.43	.17	2.04*	.09	1.00	.26	3.25***	.05	.59	.10	1.18	.17	2.05*
Gc	.08	.96	.11	1.32	.05	.62	.01	.13	.06	.70	-.02	-.20	.01	.01	.02	.25
SDE	.03	.41	-.14	-1.69	.02	.28	.11	1.37	.06	.83	-.12	-1.53	.09	1.18	-.08	-1.01
IM	-.07	-.90	.08	1.00	-.05	-.65	.02	.29	.01	-.11	.16	1.95	-.03	-.38	.11	1.29
R^2	.74		.05		.96		.42		.13		.06		.12		.08	
ΔR^2	.47		.02		.69		.13		.10		.32		.91		.05	
	F(5/173)= 2.75 p<.05		F(5/173)= 1.85 p=.106		F(5/170)= 3.59 p<.01		F(5/164)= 1.44 p=.214		F(5/173)= 508 p<.01		F(5/173)= 2.18 p=.059		F(5/170)= 4.49 p<.01		F(5/164)= 2.90 p<.05	

Note. β– standardized regression coefficient, t– t– test value for standardized regression coefficient, *p<.05, **p<.01, *** p<.001. R^2 – proportion of variance explained by the model; ΔR^2 – adjusted proportion of variance explained by the model, F-(F-ratio)– significance of regression model.

The meaning of other abbreviations is the same as in the Tables 2 and 3.

We failed to find any impact neither of the Gc intelligence factor nor of any dimensions of Social desirability scale on the FG and BF score difference of Amoral dimension facets.

Discussion

Score manipulations on Amoral in various situations

Looking at the data presented in Table 2, greater FB than FG scores on Amoral were observed. In other words, the results suggested that the respondents

fake more when they fake bad than when they fake good about themselves. This finding is in line with some previous findings, e.g., by Scandell (2000) and Viswesvaran and Ones (1999). Scandell (2000), who intended to design the scale validity for the NEOFFI instrument, although using different procedure, found greater effect of faking under fake bad than under any other instruction. Viswesvaran and Ones (1999), reported also that the respondents are disposed to fake more under the instruction to fake bad, than under others instructions. The explanation of this effect the authors did not find in literature, since earlier studies were not intended to seek for such explanations. Viswesvaran and Ones (1999) suggested that it is easier to comprehend and to give appropriate answers under fake bad instruction, considering the fake good instruction in different, much more uncertain, complex, and multidimensional way. Therefore, from their perspective, this result could be explained by the easiness of answering to the situational demands. Analogously to them, we also consider that it seems to be logical that faking bed on Amoral dimension appeal much more effective, because of the single dimensionality and simplicity of that instruction. Fake good instruction is multidimensional, multilayered, and more complex and consequently requires much more cognitive efforts, and is therefore difficult for answering. This explanation should be considered carefully, primarily considering the Lanyon's suggestion (Lanyon, 1996) that negative presentation management is more complex than positive one, because it is based on insincerity and cheating of mental, physical and health symptoms.

Correlations between score manipulations on Amoral and score on Morality

As a part of this study, the correlation level between the FG and FB scores of Amoral dimension facets of HEDONICA inventory and the score on Morality dimension of Self-concept scale was investigated. As per our knowledge, till now, direct testing of the correlation of Morality to the manipulation with scores on any personality scale was not published anywhere, i.e., this study present the first one. The results presented in Table 3 indicated that Morality shows correlation to both FG and FB scores of Amoral dimension, being thus the predictor of them. According to the correlation level, the prediction power of Morality is stronger to FB than to FG score.

Morality has highest correlation to both FG and FB scores of Resentment facet of Amoral. As regards to the Brutality facet, while there is no statistically significant correlation of FG score, there is moderately high correlation of FB one with the score on Morality.

Here we may address the study by Lu and Cheng (2011) for the interpretation of this part of results. They examined whether the self-deception (measured by SDR scale (Paulhus, 1998) was correlated to the Morality dimension of Self-concept scale and suggested that higher self-deceptive subjects had higher scores than the subjects with lower self-deception scores. If it is allowed to interpret the result derived from our study in the terms of the study of Lu and Cheng

(2011), then we could say that the respondents more susceptible for deception of themselves are less susceptible to fake their personality scores, while respondents less susceptible for deception of themselves are more susceptible to fake their personality scores.

Fairness, one of the facets of HEXACO domain Honesty/Humility was found to be susceptible for faking in MacCann's study (MacCann, 2013), focused on correlations between faking on personality inventories and intelligence. As reported, Cohens "d" (Cohen, 1992) for Fairness amounted to .49. Also, Honesty/Humility was found to be a strong predictor of negative behaviors (Lee, Gizzarone, & Ashton, 2003). As Honesty is similar to Amoral (Međedović et al., 2012), we can interpret this result in a way that Amoral is also better in describing fake bad, rather than fake good personality traits.

Correlations of score manipulations on Amoral to scores on dimensions of Social desirability scale

The plan of this study, among others, involved the investigations of relationship between the scores on BIDR scale and the scores in either S2 or S3 situations relative to the honest (S1) one, on the Amoral dimension of HEDONICA inventory. In that way we wanted to prove to which extent are the respondents prone to fake on Amoral dimension and its facets, in light of their scores on IM and SDE dimensions of BIDR scale. The answers to such questions may be get from the data presented in Table 3.

There are many literature reports prompting the conclusion that faking scores correlate with various personal traits. Li & Bager (2006), Holden & Passey (2010) and Konstabel, Aavik, and Allik (2006) reported positive correlations between the BIDR dimensions and the dimensions of Five-Factor Model. They found that Conscientiousness and Agreeableness are related with IM, and SDE is related to Neuroticism, Conscientiousness and Agreeableness. The investigations conducted by Konstabel et al. (2006), Kurtz, Tarquini, & Iobst (2008) and Lönnqvist, Paunonen, Tuulio-Henriksson, Lönnqvist, & Verkasalo (2007) indicated the correlation between some dimensions of NEOPIR and BIDR scales. Namely, Agreeableness and consciousness were found to correlate with Impression Management, and Agreeableness, Extraversion and Counsciousness were found to correlate with the Self deception.

de Vries, Zettler, and Hilbig (2014) reported that the individuals high-scored on Honesty-Humility (H) dimension of HEXACO model, are prone to expose themselves on SD tests (for instance, on the BIDR one) as non-fakers, silent, status oriented and inclined to positive pole of IM scale. Since this insincere behavior occupied greater part of variance of IM scale, H dimension was characterized as correlating to IM dimension. Lee et al. (2003), using early form of HEXACO scale, revealed the correlation of self– and peer-related H dimension and IM scale. From their study one may expect that individuals high-scored on H dimension of HEXACO model should have high scores on IM scale, too.

Further to the above mentioned literature reports, relying on the other studies which indicated the correlation between Narcissism and SDE (Paulhus,

1998; Raskin, Novacek, & Hogan, 1991), we expected that the faking score on Amoral dimension correlates to the SDE dimension. However, the results presented in Table 3 indicate that only the score on Viciousness correlates with the IM score (although rather low level correlation was perceived). No significant regression coefficient was evidenced (Tables 3 and 4). The other dimensions displayed no any correlation with the SD dimensions. Thus, these results indicate that the here applied faking score measurement did not provide definite relationship with the SD scale. Before a more detailed analysis of the reasons, which would be desirable, we may conclude that SD scale may not be used as a reliable predictor of faking scores on Amoral dimension.

The correlations of score manipulations on Amoral to the intellectual abilities

The results of this study indicated that, as presented in Table 3, statistically significant correlation was obtained between FG and FB scores of Amoral and fluid intelligence factor (Gf). Fluid intelligence is related to the faking scores on facets Projection and Resentment. Basically this results indicates that a person of with higher FG scores on Amoral facets Resentment and Projection, has also higher scores on Fluid Intelligence. This result could be most closely linked to the result derived from the study about the correlation between faking on Consciousness and Mechanical Intellectual Abilities (Merlini, Sudduth, Ricci-Twichell, Kung, & Griffith, 2014), which suggested that the respondents with higher scores on Mechanical Intellectual Abilities faked more on the trait Consciousness of the personality scale in situation S2. This result, however, is not in line with the result of Mersman and Shultz (1998), which failed to find incremental validity of the g-factor in predicting „Big five“ scores in S2 (fake good) situation, when compared to social desirability dimensions, self-monitoring and impression management dimension. They only confirmed negative correlation between g-factor and Neuroticism dimension in S2 situation. More specifically, the respondents faking more on Neuroticism dimension in S2 situation, displayed lower scores on general factor of intellectual ability. The result derived from their study on the absence of correlation between intellectual ability and faking on personality scores, Mersman and Shultz (1998) interpreted by relative independence of these two constructs.

The respondents with higher FB scores on Resentment and Projection facets displayed higher scores on nonverbal/fluid factor of intelligence. More precisely, participants who fake more had higher achievement on nonverbal/fluid intelligence.

In our study we failed to find any significant correlation of Gc with both FG and FB scores on Amoral. This result is not in line with the study by MacCann (2013), who found the relation between Gc and faking good scores in HEXACO inventory. Our result is, however, in line with the previous findings of MacNeil & Holden (2006) who failed to find any differences in verbal abilities between successful and unsuccessful fakers on psychopathy trait. In overall, these outcomes are in line with the previously published findings about the relation between the intellectual abilities and the faking (McFarland & Ryan,

2000; Mesrman & Schultz, 1997; Pauls & Crost, 2005; Viswesvaran & Ones, 1999). Partly, the explanation of this result may be found in previous findings suggesting that people who are able to fake their personality scores really doing so because they understand the advantage to faking for the purposes of obtaining goodness (a job, etc.) (Griffith, Malm, English, Yoshita, & Gujar, 2006) and have greater understanding of the knowledge and skills required by a job (Christiansen, Burns, & Montogmery, 2005; Vasilopoulos, Cucina, Dyomina, Morewitz, & Reilly, 2006) as well as the ability to match this understanding with the requirements of personality items (Griffith et al., 2006; McFarland & Ryan, 2000). The studies examining the role of intelligence in faking show different results for real applicant context versus faking under instruction. Although the intelligent job applicants are less likely to fake, their faking ability under instruction was found to correlate with the cognitive ability (Goffin & Boyd, 2009). Taken together, these results suggest that there are two forces at work. The first one is the capacity to fake, which requires intelligence, where smarter people are capable for capture item meaning. The second force is the willingness to fake, which may correlate negatively with intelligence, where intelligent people are less concerned about the effects of the job application as well as about personality scores effects.

We could discuss the relation of Gf with FG and FB scores of Amoral in the light of the novel models of faking behaviour. In these models, the difference has been proposed between ability to fake (capacity for faking) and willingness to fake (Muller-Hanson et al., 2006; Snell et al., 1999). Ability to fake is mainly influenced by capacity to distort answers, and it was proposed that it is mainly influenced by disposition factors, experimental and test-related factors. On the other hand, willingness to fake is predominantly determined by demographic, perceptual and contextual factors. Job requirements knowledge as well as situational specific knowledge is preferably correlated to faking, as novel research findings indicated. If we consider this specific knowledge as part of Gc, then our result is not in relation to the previous findings. Our result suggest that general capacity, eg. Gf, is mainly related to faking on Amoral. May be, it could be caused by the fact that instruction, which is also important in motivation for faking, was not specific in our study, but rather more general. In addition, it may be caused by the fact that the Amoral facets are mainly undesirable, so, may be, faking bad on its items was not too hard task.

Limitations

Our study has several limitations which suggest the directions of future research.

a) We used simulated selection situations to incite faking, and therefore it remains a possibility that faking on Amoral may appear differently in real applicant situation. Namely, in real applicant situations faking is usually less pronounced since the respondents are afraid of the assumption that the test implies the ability to detect the faking, which might cause the rejection

of their application (Rothstein & Goffin, 2006). On contrary, in simulated selection situations they are asked to fake, thus they feel free to fake, and the faking determinants may expose themselves as to be more effective.

b) Our sample was a group of students, while our results may differ in case of offender sample.

c) We used within sample design study, where participants filled in the same questionnaire under all instructions/contexts. Although this type of research design allowed us to calculate direct effects of faking, it is susceptible to some methodological boundaries, such as carry over effect is.

d) It is possible that the results will be modified if the interstimulation situations were organized so that the threats for validity were minimized (for example, by increasing the interval of testing situations).

e) Insufficient correlation of faking scores on Amoral facets with Social Desirability dimensions was found, and further investigation is needed, for instance, by use of recent moralistic-egoistic Bias scale (Paulhus, 2002).

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RECEIVED 31.03.2015.
REVISION RECEIVED 19.11.2015.
ACCEPTED 20.11.2015.