WHY HUNGARIAN HIGH SCHOOL STUDENTS CHEAT?

© Dávid FARKAS & © Gábor OROSZ
(University of Szeged, Szeged, Hungary)

davidfarkas9@gmail.com & gaborosz@gmail.com

The goal of the present questionnaire study was the exploration of the impact of individual, contextual and cultural value-related factors on Hungarian high school students' (N = 236; M = 96, F = 140) self-reported individual cheating behavior. The validity and reliability of the utilized scales were tested. According to the results (1) attitudes towards cheating, (2) guilt after cheating and (3) grade point average (GPA) had direct impact on self-reported cheating behavior. Indirect predictors were observed also. The results are discussed from the perspective of Hungarian cultural and educational context.

Keywords: individual cheating, grade point average, academic motivation

In Eastern-European countries the prevalence of academic cheating is high as 87.9%. This number is surprisingly high in comparison with approximately 5% that was measured in Scandinavian countries (Teixeira & Rocha, 2010). Furthermore, on the basis of the result of Grimes (2004) in post-socialist countries the number of students who self-report cheating is significantly higher than in the USA. According to Lupton, Chapman and Weiss (2000), Polish students internalized norms that inhibit cheating behavior in a smaller extent, than their Northern American peers. Poltorak (1995) found that Russian students even if evaluate academic dishonesties as cheating, most of them find acceptable assignment-related – mainly collaborative – dishonesties. Consequently, the sociological perspective can be relevant when school-related dishonesties are explained. On the basis of previous studies (Grimes, 2004; Hrabak et al., 2004; Lupton, , Chapman & Weiss, 2000; Magnus, Polterovich, Danilov & Savvteev, 2002; Orosz, 2009; Poltorak, 1995) in the Eastern European region academic cheating seems to be a more serious issue, than in Western Europe or North-America.

Academic cheating involves heterogeneous behaviors. According to Cizek's (2003) definition cheating refers to prohibited information transmission, usage of not-allowed instruments and exploitation of weakness of persons and/or processes in order to take advantage in school performance situations. Cheating behavior is influenced by factors in different levels, in which individual (demographic, grade point average, positive attitudes toward cheating, guilt, competition, motivational), situational and interpersonal (behavior of peers, peers' attitudes toward cheating, risk of detection, peer reporting of cheating, expected punishments, atmosphere of school) and societal, cultural (values of societal success) dimensions can be defined. In the present study the primary aim is the exploration of individual, situational and societal level value-related variables that can influence

Hungarian high school students' individual cheating. In the following the previously mentioned variables will be presented.

Individual factors in cheating

The role of gender, grade point average (GPA), attitudes toward cheating, guilt, individual differences in competition and academic motivation were examined as individual factors in cheating behavior. Classic studies' (Bowers, 1964) results about *gender* found that men cheat more than women. These results were interpreted by the socializational theory of sex roles. Three decades later McCabe and Trevino (1997) found no gender differences in self-reported cheating. Among Moscow students Poltorak (1995) found that more men cheated in exams and with other assignments. However, in another post socialist country, in Croatia Hrabak et al. (2004) have not found any gender differences. Whitley, Nelson and Jones's (1999) meta-analysis about gender differences in academic cheating shows that men have a higher level of self-reported cheating and report more positive attitudes toward cheating than women, however these differences disappear if their real behavior is measured in experimental settings.

According to Whitley's (1998) meta-analysis containing 74 studies and more recent studies also (Bolin, 2004; Jensen, Arnett, Feldman & Cauffman, 2001) showed the *positive attitudes towards cheating* have great impact on committing school cheating. There is no consensus in the literature about *guilt* and its relationship with cheating behavior. Malinowski & Smith (1985) found negative correlation between the feeling of guilt and cheating. Diekhoff, LaBeff, Shinohara and Yasukawa (1999) found that among American and Japanese students who do not cheat guilt is the most effective deterrent. Although DePalme, Madey and Bornshein (1985) found that those participants cheated more who had greater guilt after cheating. Evolutionary psychology can give a potential theoretical framework which claims that guilt is in negative relationship with cheating. According to this theoretical approach guilt is an evolutionary cue and feeling it leads to the decrease of future cheating behaviors or at least the cheater will try to compensate the victim of the cheating or at least the cheater will contribute more in to the common goods (Bereczkei, 2009). However, in the educational system the notions of evolutionary psychology cannot be fully extrapolated. Because in school context individual cheating do not harm others due to the Pareto optimum principle if grading is not based on a bell curve (i.e. there is no interdependence between students' grades). Earlier results (Kerkvliet & Sigmund, 1999; Leming, 1980; Newstead, Franklyn-Stokes & Armstead, 1996; Whitley, 1998; Straw, 2002) show negative relationship between academic cheating and *grade point average (GPA)*. Data from American and English results show that students who have higher GPA cheat less during their assignments than their peers with lower GPA.

According to Whitley's meta-analysis (1998), classroom *competition* is in moderate positive relationship with cheating behavior. Furthermore, several studies (Anderman & Murdock, 2007; Smith, Ryan & Diggins, 1972; Taylor, Pogrebin & Dodge, 2002) showed that competition correlates positively with academic cheating. However, these studies focused less on individual differences of competition, and its potential impact on cheating behavior. Among individual factors of competition we can define *self-developmental* (Ryckman, Kaczor & Gold, 1996) competitors. They focus on their own personal development, they do not perceive their adversaries as enemies and they enjoy the process of competition, because they can learn

from it. Furthermore, h*ypercompetitive* individuals, who want to win at any cost and see their rival as enemies, also can be aggressive against them can be distinguished from self-developmental traits (Ryckman, Hammer, Kaczor & Gold, 1990). According to former behavior data self-developmental competition and collaborative cheating are in negative relationship (Orosz, 2010). However, a questionnaire carried out with university students showed no relationship between self-developmental competition and academic cheating, whereas hypercompetitive attitudes were in slight positive relationship with several forms of academic dishonesties.

According to the social-cognitive model academic *motivation* is a multilateral dynamic phenomenon and not a one-dimensional system (Linnenbrink & Pintrich, 2002). Following the Self-Determination Theory (Deci & Ryan, 1985) paradigm we can divide motivation into (a) intrinsic and (b) extrinsic motivations. *Intrinsic* motivation refers to doing an activity for itself, and for the pleasure and satisfaction derives from it. *Extrinsic* motivation appears when an individual is engaged in an activity not for its own sake but as a means to an end. When an individual does not perceive the causality of his/her actions and the contingencies between them and results can be labeled as *amotivation*. These individuals have neither extrinsic nor intrinsic motivations and they feel incompetent in the given field (Deci & Ryan, 1985; Vallerand et al., 1992). Studies examining the correspondence between school-related motivations and cheating found that extrinsic motivation related positively to cheating behavior, whereas intrinsic motivation related to it negatively. Those students who behaved honestly during exams and other assignments are characterized by high intrinsic and low extrinsic motivation (Anderman, Griesinger & Westerfield, 1998; Jordan, 2001).

Situational and inter-personal factors in cheating

According to Whitley's (1998) meta-analysis and McCabe and Trevino (1997) seminal study contextual variables have a greater impact on cheating behavior, than individual factors. Among the numerous contextual variables in the present study the role of risk of detection and expected punishments were examined. Various studies found that the – perceived – *risk of detection* has an inverse relationship with cheating behavior (Heisler, 1974; Corcoran & Rotter, 1987; Covey, Saladin & Killen, 1989; Whitley, 1998). For example in Corcoran and Rotter's (1987) experiment the participants had to solve a maze-puzzle with their eyes closed. In the low risk condition the experimenter stood behind the participants. In the other condition the risk of detection was high because the experimenter stood before them. Opening the eyes – which counted as cheating – occurred more often in the low risk condition.

According to the results of Tittle and Rowe (1977), *punishments* can be useful deterrents of academic cheating. However, previous studies that examined American (Bunn, Caudill & Gropper, 1992; Cohran, Chamlin, Wood & Sellers, 1999), Japanese (Diekhoff, LaBeff, Shinohara and Yasukawa, 1999), UK (Salter, Guffey & McMillan, 2001) and Lebanese (McCabe, Feghali & Abdallah, 2008) students suggest that it might be not the most optimal tool in order to reduce the occurrence of academic dishonesties. Bunn, Caudill and Gropper (1992) for example found that expected seriousness of punishment did not relate to students' cheating and Cohran et al. (1999) also did not find any deterrent effect of formal sanctions threat on academic dishonesty.

Societal values and cheating behavior

According to Poltorak (1995), high prevalence of cheating in Moscow higher education is rooted in the malfunctioning of societal and education system. According to her results Russian students' rationalize their cheating behavior by accusing the educational system which was the most important distributors of the ideology in the socialist and communist period. However, the ideology was not accepted by the majority of Russians. Due to students cheating against the authorities (such as teachers) who demonstrated the ideology became a justified and rightful act. Another factor which influenced high occurrence of cheating among Moscow students is the relative lack of competition between them which allowed several forms of collaborative cheating behavior. In other cultures studies of academic dishonesty see the role of competition differently. As many American researcher (Anderman, Griesinger & Westerfield, 1998; Levitt & Dubner, 2005; Anderman & Murdock, 2007; Nichols & Berliner, 2007) see the extremely competitive American educational system as one of the most important societal-level factor which induces both students' and teachers' dishonest behavior.

In this study we aimed to examine the relationship between societal success-related values and academic cheating. Namely, it was intended to explore how the perceived values that can lead to success in the Hungarian society (Hungarian Gallup Institute, 1998) have impact on self-reported academic cheating behavior. It was hypothesized that meritocratic values (efforts, abilities) that result societal success will negatively, while the value concerning the importance of social networks (good relationship with persons who possess resources) and the role of aggressive striving values will be related positively to academic dishonesties.

Hypotheses

Our study aimed to set up an exploratory model for the individual academic cheating which take into consideration the attitudes towards cheating, guilt, individual differences in competition, learning motivation as individual, the risk of detection and expected punishments as situational and interpersonal as well as the values of societal success as societal and cultural factors. The hypotheses are summarized in Table 1 with the most relevant references. The first four hypotheses refer to individual factors. Thus it was presumed that attitudes towards cheating have positive (H1), guilt (H2), GPA (H3) and self-developmental competition (H4a) have negative, hypercompetitive attitudes (H4b) has positive, intrinsic motivation negative (H5a), extrinsic motivation (H5b) and amotivation (H5c) have positive effect on self-reported cheating. In the case of contextual factors we hypothesized that the risk of detection (H6) and expected punishments will have a negative effect on cheating behavior (H7). Finally, it was expected that meritocracy-related values of societal success correlate negatively with academic cheating (H8a). Values regarding utilization of networks (H8b) and values of aggressive striving are in positive connection with cheating (H8c). In order to test the hypotheses an exploratory path-analysis model through Structural Equitation Modeling (SEM) was created.

Table 1. *The summary of the hypotheses. The signs of (+) and (-) refers to the supposed direction of the relationship between the given variable and academic cheating*

	Hypothesis		Effect	References
H1	Positive attitudes towards cheating		(+)	Bolin (2004), Jensen et al. (2001), Whitley (1998)
H2	Guilt		(–)	Bereczkei (2009), Malinowski & Smith (1985)
H3	Grade point average (GPA)		(–)	Kerkvliet & Sigmund (1999), Leming (1980), Newstead et al. (1996), Whitley (1998), Straw (2002)
H4	Competition	a. self-developmental b. hypercompetitive	(–) (+)	Anderman & Murdock (2007), Orosz (2010)
H5	Academic motivation	a. intrinsic mot. b. extrinsic mot. c. demotivation	(–) (+) (+)	Anderman et al. (1998), Jordan (2001)
H6	Risk of detection		(–)	Leming (1978), Corcoran & Rotter, (1987), Covey et al. (1989), Whitley (1998)
H7	Expected punishments		(–)	Bunn et al. (1992), Diekhoff et al. (1999), Salter et al. (2001), Tittle & Rowe (1977)
H8	Values of Societal Succes	a. meritocratic b. social networks c. aggressive striving	(–) (+) (+)	

Methods

Participants

236 high school students participated in the present study. 40.7% of them were male (N = 96), 59.3% were female (N = 130). Their age was between 15 and 20 years old (M = 17.22, SD = 1.147). Five participants were excluded due to incomplete questionnaires. Data were gathered from two high schools and nine classes. The schools were informed about the research issue and participants we assured about their anonymity. Furthermore, students were assured about teachers will not obtain information about their personal responses. Participants volunteered and they did not get any reward for participation. We choose high school students because in the field of academic cheating in Hungary no previous research has been carried out with this age group.

Variables and measures

In order to test our hypotheses a questionnaire was created. In the instructions anonymity was emphasized. Students were asked to respond as honesty as possible. Subsequently they were encouraged to signal their remarks and raise questions. On the first page questions regarding demographic were asked such as gender, age, school, specialization, GPA from the last semester, questions about sport and other extracurricular activities, number of siblings, qualifications and income of parents.

Fülöp and Rózsa (2009) competition scale was utilized. The scale contained two subscales containing eight items each, a hypercompetitive and a self-developmental based on Ryckman et al. (1990, 1996) findings. Students were asked to indicate in which measure the item characterizes her/him (1: Doesn't correspond at all – 4: Correspond a lot).

Four vignettes about individual cheating were utilized (see Table 2). Participants were instructed to evaluate the vignettes on the following dimensions: (a) acceptance of this behavior, (b) self-reported cheating behavior at least once during the last semester, (c) expected punishment in the case of detection, (d) perceived risk of detection in the given situation and (e) feeling of guilt after successful cheating. The measure of the acceptance, the risk of detection and the guilt was based on a four point Likert-type scale (1: totally unacceptable / not at all risky / not at all, 2: not acceptable / not risky / a little, 3: acceptable / risky / moderately, 4: totally acceptable / very risky / very). In order to measure expected punishment on each situation qualitative method was utilized. The question regarding self-reported cheating behavior could be answered with yes or no.

The next section of the questionnaire contained Vallerand et al.'s (1992) Academic Motivation Scale. This instrument included seven factors, among them three refers to intrinsic, three reflect extrinsic motivation and one measures amotivation. The three intrinsic factors are (a) *"to know"* – which includes motivation to acquire knowledge (b) *"toward accomplishment"* – which includes motivation to acquire a skill or competence and (c) *"experience stimulation"* – motivation originated from the positive learning experiences. The three extrinsic factors are (a) *"external regulation"* – in this case the students learn due to only external pressures and obligations, (b) *"introjected regulation"* – the student starts to internalize the external pressures and (c) *"identified regulation"* – the subject becomes a valueable for the student, he or she can identify with it, but in this form of motvation external forces play important role also. The *amotivation* scale measures the absence of both above mentioned forms of motivation. The participants had to indicate on a seven level Likert-type scale to what extent of the items corresponds to their reasons why they go to school (1: Doesn't correspond at all – 7: Corresponds exactly). The questionnaire was translated from English to Hungarian and later back-translated to English by with bilingual lectors. Finally, controversies were discussed among the translators and researchers until consensus revealed concerning the best possible translation that reproduce the linguistic and psychological meaning of the questionable items.

Finally, a scale of societal values of success by Hungarian Gallup Institute (1998) was utilized, which contained 14 value-related items concerning how can be someone successful in Hungary. Therefore it measured the perceived strategies that can lead to success in the present Hungarian society. Students could evaluate the items on a 5 level Likert-type scale (1: not at all – 5: absolutely) on the basis of the given strategy or trait contribute to the achieve success in Hungary. However, this scale was originally constructed for adults, and one item which reflects on the crony phenomenon was not familiar for adolescents in the pretests, therefore it was altered in order to avoid misunderstandings.

Results

Validity and reliability of scales

Data were dealt with SPSS for Windows 15.0.0 and with AMOS 17.0. Validity and reliability were tested by Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Reliability was measured by Cronbach's Alphas. In the EFA maximum likelihood method and direct oblimin ($\delta = 0$) rotation were utilized. Missing data were substituted by means. EFA factors were saved as factor scores, and these values were utilized in further analyses. Factors derived from both EFA and CFA did not have higher cross loadings than .3, except one case.

On the basis of EFA and CFA of hypercompetitive and self-developmental competitive scales five items were excluded. The final factor structure had good fit indices ($\chi^2 = 62.8$, CMIN/DF = 1.61, $p = .009$, CFI = .968, RMSEA = .051) and according to the EFA three factors explained 49.2 % of the variance ($\alpha = .778$). The first factor (five items) defined a *hypercompetitive scale* ($\alpha = .751$). However, in the self-developmental (SD) competitive scale two factors emerged. The first one (two items) refers to the *SD challenge factor* ($\alpha = .772$), whereas the second (four items) reflect *SD skill improvement* during competition ($\alpha = .771$). CFA model have better fit in the case of separated self-developmental competition dimension, in comparison with the unified solution.

According to the EFA and CFA of academic motivation scale out of 28 items 11 were excluded. In comparison with the original model of Vallerand et al.'s (1992) the toward accomplishment intrinsic (four items) and identified extrinsic motivation (four items) factors did not appear in the present model. Furthermore, in the case of the *to know* dimension of intrinsic motivation one item and concerning the experience stimulation factor two items were dropped out in order to achieve appropriate validity. The final CFA model contained five factors and it showed good fit ($\chi^2 = 165.4$, CMIN/DF = 1.378, $p = .004$, CFI = .976, RMSEA = .040), which explains 58.87% of the variance in the EFA with moderate reliability ($\alpha = 0{,}674$). Two factors referred to the intrinsic dimension: the first one (four items) is the to know factor (.787), the second one reflect the experience stimulation factor ($\alpha = .826$). Furthermore, two extrinsic factors were distinguished: external regulation ($\alpha = .800$) and introjected regulation ($\alpha = .770$). Finally, amotivation emerged as a distinct factor ($\alpha = .859$).

According to the EFA and CFA of the scale of societal values of success one item was excluded and four factors were distinguished. This factor structure explains 46.93% of the variance with moderate reliability ($\alpha = .623$) and it shows good model fit ($\chi^2 = 104.4$, CMIN/DF = 1.486, $p = .005$, CFI = .954, RMSEA = .048). The four factors were the following: *meritocratic values* (five items, $\alpha = .806$), values concerning the importance of *social networks* (four items, $\alpha = .695$), values regarding the importance of *political affiliations* (two items, $\alpha = .805$), and values of *aggressive striving* (three items, $\alpha = .694$).

Descriptive results

Cheating-related descriptive frequencies can be seen in Table 2. According to the self-reports 53.4% of the respondents copied from a classmate without acknowledging him/her and 67.1% of them at least once copied from notes or books during an exam in a period of one semester. More than two third of students utilized pre-prepared crib notes in a six month period and almost

20% of them used unpermitted electronic equipments in this time span. Beyond these data Table 2 provides descriptive information concerning other measured variables as percentage of students who consider cheating the given vignettes, percentage of students find acceptable the given behavior, percentage of students who feel guilt after cheating, percentage of students who see risky the cheating situation and finally percentages regarding expected punishments.

Table 2. *Percentages of (1) students' self-reported individual cheating behaviors; (2) percentage of students who find acceptable of the given situation; (3) percentage of students who would feel guilt after a successful attempt of such cheating; (4) percentage of students who perceive risky to cheat in the given way; (5) proportion of students who expect different punishments in case of detection (nothing or warning, failing the exam or scolding, written warnings, expelling or similarly serious punishments)*

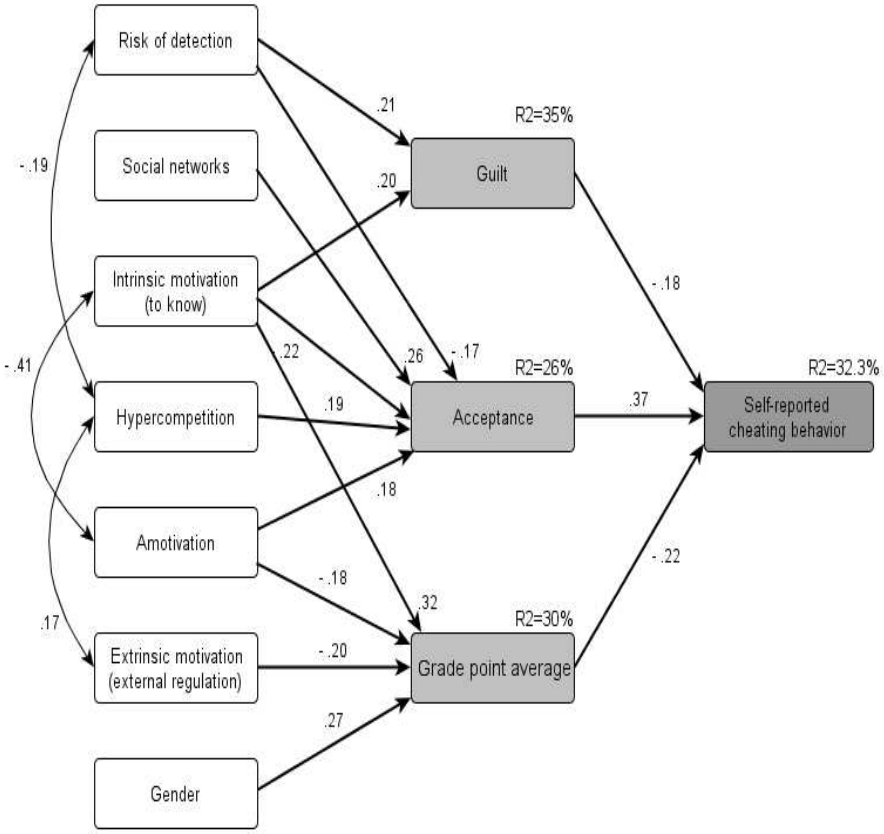
Cheating situations	Frequency (%)				Perceived seriousness of punishments (%)			
	Self-reported cheating	Acceptance	Guilt	Risk of detection	Nothing, warning	Failing the exam, scolding	Written warnings	Severe, expelling
Copying from a classmate during an exam without acknowledging him/her	53,4	51,7	34,8	81,3	14	12,3	63,6	3,4
Copying from notes or books during an exam	67,1	49,4	32,4	95,7	6,3	7,7	82	4,1
Utilization of pre-prepared cheating sheets during an exam	67,8	57,2	21,6	78,5	5,6	6	85,6	2,8
Using unauthorized electronic equipments (cell phone, mp4 player, etc.) during an exam	19,1	42,5	27,5	89	10	13,5	68	8,5

Model of self-reported individual academic cheating

In order to explore direct and indirect predictors of self-reported individual cheating exploratory path analysis through Structural Equitation Modeling (SEM) was carried out, which showed good model fit (χ^2 = 55.447, CMIN/DF = 1.499, p = .026, CFI = .957, RMSEA = .046). In this model individual cheating was directly predicted (R^2 = 32.3%) by (a) acceptance of cheating (β = 0.37), by GPA (β = - .22), and by guilt (β = - .18). Furthermore, the acceptance had impact on individual cheating through guilt (β = - .42) also. In the following those variables will be presented that have only indirect effects on individual cheating through the above mentioned direct predictors. Values regarding networks' utilization in order to achieve success (β = .26), to know intrinsic motivation (β = - .22), hypercompetitive attitudes (β = .19), amotivation (β = .18), and finally risk of detection (β = - .17) had indirect impact on individual cheating through acceptance of cheating (R^2 = 26%). Moreover, to know intrinsic motivation (β = .32), gender (β = .27, men = 1; women = 2), external regulation extrinsic motivation (β = - .20) and amotivation (β = - .18) were indirect predictors of individual cheating through GPA (R^2 = 30%). Finally, risk of detection (β = .21) and to know intrinsic motivation had indirect effect on individual

cheating through guilt (R^2 = 35%). Covariances were measured between to know intrinsic motivation and amotivation (r = - .41), between hypercompetitive attitudes and risk of detection (r = - .19), and between hypercompetitive and external regulation of extrinsic motivation (r = .17) (for details see Figure 1).

Figure 1. *Path analysis SEM model concerning direct and indirect predictors of self-reported individual cheating (χ^2 = 55,447; CMIN/DF = 1,499; p = 0,026; CFI = 0,957; RMSEA = 0,046). Acceptance of cheating has direct positive impact on cheating, while GPA and guilt have direct negative effect on it. Indirect predictors can be seen on the left side of the figure*



Discussion

The main goal of the present study was to explore the effects of individual, situational and cultural value-related factors on Hungarian high school students' self-reported individual cheating behavior. Among individual predictors the impact of school motivations, competition, attitudes towards cheating, gender, GPA and guilt were examined. Furthermore, two contextual variables were taken into account as risk of detection and expected punishments. Finally, it was intended to take into consideration the indirect effect of success-related societal value level variables on self-reported cheating. According to the EFA and CFA the utilized scales show good validity, and reliability indices were acceptable also.

In order to examine the predictors and self-reported individual cheating an exploratory SEM path analysis model was created which shows that the main direct predictors are the (a) acceptance of cheating, (b) GPA and (c) guilt. Therefore, in this model individual factors had direct effect on self-reported individual cheating behavior. These results are partly opposing with previous studies which claim that individual differences have weaker effects on cheating than contextual and interpersonal factors (Anderman & Murdock, 2007; McCabe & Treviňo, 1997; Whitley, 1998). However, in the present study relatively low number of contextual and interpersonal variables was taken into account. This hiatus can be explained by that in the present study we aimed to focus mainly on such previously unexplored variables as competition and success-related societal values and the questionnaire would be too long if we attempt to add more context-related questions to the cheating vignettes. Furthermore, such very important factors as the effect of ethical codex (McCabe & Treviňo, 1997) would be hard to examine, because cheating-related ethical codices are very rare if they exist in Hungarian high schools.

Acceptance of cheating as a relatively strong predictor of individual cheating fits well to the previous researches (Whitley, 1998) and our expectations (H1) as well. Guilt had negative direct effect on individual cheating (H2). Malinowski and Smith (1985) found similar results previously. Furthermore, from the perspective of evolutionary psychology this result can be interpreted as well. Results concerning GPA were in accordance with previous studies (Leming, 1980; Newstead, Franklyn-Stokes & Armstead, 1996; Whitley, 1998) and our expectations (H3) also: negative relationship was found between GPA and self-reported individual cheating. Interestingly, GPA was defined by three motivational and a demographical variable, namely gender. It seems that intrinsic motivation has a strong positive and extrinsic motivation has a strong negative effect on GPA. This shows a different pattern from what can be found in Harackiewitz et al.'s (1997, 1998) work that extrinsic motivation is a good predictor of better grades. As a hypothetical solution we propose that for Hungarian students the grades are not good predictors of one's performance thus their extrinsic motivation has another goal, e.g. building up social networks or having a good social position in the group.

Furthermore, hypercompetitive attitudes were in positive indirect relationship with self-reported individual cheating (H4b). This result fits well to previous studies (Anderman & Murdock, 2002; Taylor, Pogrebin & Dodge, 2002) which supposed and found that competition is in positive relationship with academic cheating. However, in the individual cheating model self-developmental competition was not, but hypercompetition was related positively indirectly to cheating. Therefore, if a student would like to win all the time, who wants to be the best in every field, and who can be

aggressive in order to win find individual academic cheating more acceptable, and confess cheating with higher probabilities.

Among motivational variables the intrinsic motivation (to know) have impact on individual cheating through all of three direct predictors. The higher this kind of intrinsic motivation, the lower the guilt that a student feel, the better GPA he/she have, and he/she finds cheating less acceptable. In sum, in accordance with previous studies (Anderman, Griesinger & Westerfield, 1998; Jordan, 2001) and our hypothesis (H5a) intrinsic motivation has pervasive negative impact on academic cheating. On the basis of Anderman and Murdock (2007) the fifth hypothesis (H5b) can be proved more weakly than our hypothesis regarding intrinsic motivations. In the model extrinsic motivation (external regulation) have negative impact on only GPA as a positive indirect predictor of individual cheating. In comparison with the role of intrinsic motivation (to know) extrinsic motivation (external regulation) have a less pervasive role. Finally, our hypothesis concerning amotivation (H5c) was proven because it had positive impact on acceptance of cheating and negative impact on GPA, and therefore it appeared as an indirect predictor of individual academic cheating. In sum, the results of the present study are in accordance with previous researches that examined the link between school motivations and individual cheating behavior (Anderman, Griesinger & Westerfield, 1998; Anderman & Murdock, 2007; Jordan, 2001). However, according to the variable centered individual cheating model in the case of the examined Hungarian sample intrinsic motivation has a bigger impact on cheating than extrinsic motivation, thus it seems more important in the case of cheating that how someone is intrinsically motivated.

The results concerning risk of detection are in accordance with previous results (Covey, Saladin & Killen, 1989; Heisler, 1974; Whitley, 1998) and they proved the sixth hypothesis (H6) also. Risk of detection had negative effect on acceptance of cheating and positive impact on guilt. Therefore, it influences indirectly self-reported individual cheating. Furthermore, the results suggest that expected punishments did not have either direct or indirect effect on self-reported cheating which is in accordance with Bunn, Caudill and Gropper's (1992) and Cohran et al.'s (1999) results. The dimension of expected punishment has not appeared in the model as a significant predictor supporting the findings of Bunn, Caudill and Gropper's (1992) and Cohran et al. (1999) that punishments are far not the most reliable predictors of the cheating behavior. Finally, among societal success-related values only utilization of networks in order to succeed factor had positive impact on individual cheating through acceptance of cheating, which proved the eighth hypothesis (H8). Therefore, the more a student see networks and crony important in order to succeed in Hungary, the more he/she will find individual cheating acceptable, and consequently the more she/he will confess individual cheating. Although it is important to note that in the questionnaire the students answered the question that which of these values do you think is important for success in Hungary, thus the level identification with these values have to be left unanswered.

Conclusion

In this study it was aimed to establish a path-analytic model on cheating behavior in which individual (positive attitudes towards cheating, guilt, GPA, individual differences in competition and academic motivation), situational (risk of detection and expected punishments) and societal-level (values of societal success) variables were taken into account. Teachers tend to think that using deterrents like harsh punishments and rigorous surveillance can reduce cheating. According to our findings these situational variables, namely the risk of detection and expected punishments had modest or no effect at all on cheating, respectably. On the basis of our model to reduce the level of cheating behavior in the classroom it is important to create a school climate in which students evaluate cheating. In this attitude change honor codes could play a crucial role. Furthermore, at least in the Hungarian secondary educational context increasing intrinsic motivation and reducing amotivation can be more effective cure of cheating than exposing harsh punishments.

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