

Academic cheating and time perspective: Cheaters live in the present instead of the future



Gábor Orosz^{a,b,*}, Edina Dombi^c, István Tóth-Király^{d,a}, Beáta Bőthe^{d,a}, Balázs Jagodics^e, Philip G. Zimbardo^f

^a Institute of Psychology, Eötvös Loránd University, Budapest, Hungary

^b Institute of Cognitive Neuroscience and Psychology, Hungarian Research Centre for Natural Sciences, Budapest, Hungary

^c Doctoral School of Education, University of Szeged, Szeged, Hungary

^d Doctoral School of Psychology, Eötvös Loránd University, Budapest, Hungary

^e Institute of Psychology, University of Szeged, Hungary

^f Department of Psychology, Stanford University, Stanford, CA, USA

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ABSTRACT

The goal of this research was to explore the relationship pattern of individual differences in time perspective and the frequency of self-reported academic cheating behavior among Hungarian high school students ($N_1 = 252$, $M_{age} = 16.46$, $SD_{age} = 1.16$; $N_2 = 371$, $M_{age} = 16.56$, $SD_{age} = 1.18$). According to the results of structural equations modeling, Future time perspective had a negative direct relationship with cheating, while Present hedonistic time perspective had a direct positive relationship with cheating. Moreover, academic motivations mediated the relationships between time perspectives and academic cheating. Future time perspective had direct negative relationship with amotivation and direct positive relationship with intrinsic and extrinsic motivation. Considering the malleability of time perspective, we claim both academic motivations and cheating can be influenced by time perspective.

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1. Introduction

Academic cheating matters. In Grimes' (2004) cross-cultural study, almost three-fourth of Eastern-European college students reported some forms of cheating. In Hungary, 75% of high school students used cheating sheets and >60% copied during exams in a single semester (Orosz, Farkas, & Roland-Lévy, 2013). These numbers are especially troubling when we consider the relatively strong link between university cheating and workplace dishonesty (Nonis & Swift, 2001) or organizational corruption (Crittenden, Hanna & Peterson, 2009). Behind the already explored motivational variables (e.g., Anderman, Griesinger, & Westerfield, 1998; Jordan, 2001; Pulvers & Diekhoff, 1999), there might be more general individual differences related to students' academic dishonesty. Time perspective can be a potential candidate. Students focusing on long-term goals versus students seizing the day might have different academic motivational patterns that in turn can lead to different level of cheating behavior. In the present study, we investigated the relationships between different time perspective

dimensions and academic cheating considering the mediating role of academic motivations.

According to Zimbardo and Boyd (1999), time perspective (TP) is an unconscious and individually determined attitude toward time. The conceptualization of psychological time includes three time zones: past, present and future. People differ in the manner they relate to time and this attitude is strongly related to a wide range of behavior. Several studies identified TP dimensions behind a broad variety of behaviors such as health-related issues (e.g., Adams & White, 2009; Carstensen & Fredrickson, 1998; Guthrie, Butler, & Ward, 2009; Hall & Fong, 2003; Rothspan & Read, 1996), coping (Beiser & Hyman, 1997; Wills, Sandy, & Yaeger, 2001), perceived stress (Worrell & Mello, 2009; Zimbardo & Boyd, 1999), drinking habits (Zimbardo, & Boyd, 1999; Milfont, Andrade, Belo, & Pessoa, 2008), and substance use (Keough et al., 1999; Wills et al., 2001).

Zimbardo and Boyd (1999) distinguished five possible time perspectives (TP): Past negative TP, Past positive TP, Present hedonistic TP, Present fatalistic TP and Future-oriented TP. Past negative TP is a generally negative and past-oriented view of time, emphasizing the inconvenient memories. Contrarily, Past positive TP is a generally positive approach toward past which contains pleasurable memories. Present hedonistic TP refers to a pleasure-seeking and risk-taking attitude where one concentrates on the immediate satisfaction of needs while at the same time ignoring possible future consequences. Present fatalistic TP

* Corresponding author at: Institute of Psychology, Eötvös Loránd University, Izabella utca 46, Budapest H-1064, Hungary.

E-mail address: gaborosz@gmail.com (G. Orosz).

refers to a faith-driven, helpless and hopeless orientation of life. Finally, Future TP is a generally future-oriented view of time in which striving for future goals and rewards are predominant.

According to the prior studies mentioned above, time perspective as a background variable has a general and pervasive influence on different aspects of life, and education is not an exception. Numerous studies confirm that FTP was related to good academic performance (e.g., *Zimbardo & Boyd, 1999*), which could be rooted in the ability to work in the present for delayed rewards in the future. *De Bilde, Vansteenkiste and Lens (2011)* found that students with Future TP were mainly driven by internal motives such as intrinsic motivation (i.e., when the student is engaged in an activity for its own sake and for the pleasure and satisfaction derived from it). According to *Phan's (2009)* findings, Future TP was significantly associated with mastery goals (i.e., when the goal is the self-development or improvement of competences by the learning activity), which can be related to deeper processing during learning and consequently to a better academic performance. On the other hand, Present hedonistic TP and Present fatalistic TP were connected to poor academic achievement among university students (*Zimbardo & Boyd, 1999*). In the case of Present hedonistic TP, the sensation seeking-related aspects of present-hedonism could indicate that students are looking for joyful situations in the present instead of working for rewards in the future. In the case of Present fatalistic TP, students consider their efforts to be unrelated to their school grades and they delay tasks which can also lead to lower academic performance (*Jackson, Fritch, Nagasaka, & Pope, 2003*).

To the best of our knowledge no prior study has focused on the possible effect of time perspective on academic cheating. However, the link between motivations (and achievement goals) and academic cheating has been extensively studied (*Anderman & Murdock, 2007*). Previous results suggested that intrinsic motivation (and mastery goals) were negatively related to cheating, while extrinsic motivations (and performance goals) were positively associated with cheating (e.g., *Anderman et al., 1998; Jordan, 2001; Pulvers & Diekhoff, 1999*). Eastern-European results also demonstrated a negative link between intrinsic motivation and cheating, however the link between extrinsic motivation and cheating was not supported (*Orosz et al., 2013*). Furthermore, amotivation (i.e., the lack of extrinsic or intrinsic motivation in terms of low inclination in academic activities as a result of the lack of perceived causality between one's action and the results and the lack of feeling competency) was positively related to academic cheating (e.g., *Angell, 2006; Harding, Carpenter, Finelli, & Passow, 2004; Park, Park, & Jang, 2013*).

Prior works (*De Bilde et al., 2011; Phan, 2009*) have already explored the differentiated effect of TP dimensions on academic motivations and goals. Moreover, it is also known how these academic motivations can influence academic cheating (*Anderman & Murdock, 2007; Angell, 2006; Orosz et al., 2013*). However, less is known about the potential direct and indirect effects of TP dimensions on academic cheating when taking academic motivations into account. Considering that TP can be identified as a rather general mind set variable in different fields of life (*Guthrie et al., 2009; Keough et al., 1999; Wills et al., 2001; Worrell & Mello, 2009*), the present research sought to investigate its relationship with academic cheating in a mediation model. More specifically, it was hypothesized that TP was directly related to academic motivations and indirectly related to cheating via these motivations. On the basis of *De Bilde et al.'s (2011)* results, it was hypothesized that FTP was negatively related to cheating with the mediating role of intrinsic motivation. Furthermore, based on prior results of *Zimbardo and Boyd (1999)* and *Jackson et al. (2003)*, it was expected that PHTP was positively related to cheating as this TP was related to impulsive behaviors—and many forms of cheating have an impulsive background (*Anderman, Cupp, & Lane, 2009; Anderman & Murdock, 2007*).

2. Methods

2.1. Participants and procedure

In the present research, two separate samples were applied. After data screening,¹ Sample 1 consisted of 252 Hungarian students from three high schools (152 women, 96 men and 4 undefined). Their age ranged from 14 to 19 years ($M = 16.5, SD = 1.16$). Sample 2 consisted of 371 Hungarian high school students from four high schools (197 females, 174 males), aged between 14 and 18 years ($M_{age} = 16.56$ years; $SD_{age} = 1.18$ years). As a consequence of online data gathering in the classroom, there was no missing data. In the case of both samples, the research was done in accordance with the Declaration of Helsinki and was approved by the Institutional Review Board of the related university. Participants were informed about the content of the questionnaire when they volunteered for the study and they did not receive compensation for the participation. They were assured about their anonymity and the confidentiality of their answers. The schools and parents were informed about the topic of the research through an opt-out passive consent.

2.2. Measures

The *Academic Dishonesty Scale (McCabe & Trevino, 1997)* includes behavioral items about academic cheating. Participants are asked to respond how often they have engaged in each type of behavior since the beginning of their studies (10 items; e.g., “Using crib notes on a test.”; $\alpha_{S1} = 0.88, \alpha_{S2} = 0.92$). Participants answer by using a slightly modified 5-point scale (1 = not even once, 2 = 1–2 times; 3 = 3–5 times; 4 = 6–10 times; 5 > 10 times). This five-point scale was different from the original version of *McCabe and Trevino (1997)* as higher rates of cheating were measured in previous Hungarian and Eastern-European studies (*Grimes, 2004; Orosz et al., 2013; Orosz et al., 2015*). *McCabe and Trevino (1997)* did not specify the frequency of the cheating (1 = never; 2 = once; 3 = a few times; 4 = several times; 5 = many times) and the academic time span (one semester vs. during all high school years) in their original scale. In the present study, the scale was modified by restricting the time span to the last semester and by applying more precise labels to the scale (1 = not even once, 2 = 1–2 times; 3 = 3–5 times; 4 = 6–10 times; 5 = > 10 times). We carried out these modifications because we expected that this version can more appropriately grasp individual differences in academic dishonesty in case of relatively high cheating rates. Moreover, several previous studies suggested the appropriateness of questionnaire studies in the field of academic cheating (i.e., *Whitley, 1998*).

The Hungarian adaptation of the *Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999)* was used to measure TP. This shorter version (*Orosz, Dombi, Tóth-Király & Roland-Lévy, 2015*) proved to have good psychometric characteristics and factor structure with 17 items. The questionnaire contains five dimensions: Past-Negative (four items; e.g., “It's hard for me to forget unpleasant images of my youth”; $\alpha_{S1} = 0.78, \alpha_{S2} = 0.77$), Past-Positive (three items; e.g., “I enjoy stories about how things used to be in the ‘good old times’.”; $\alpha_{S1} = 0.58, \alpha_{S2} = 0.63$), Present Hedonistic (three items; e.g., “I take risks to put excitement in my life.”; $\alpha_{S1} = 0.78, \alpha_{S2} = 0.75$), Present Fatalistic (three items; e.g., “My life path is controlled by forces I cannot influence”; $\alpha_{S1} = 0.50, \alpha_{S2} = 0.52$), and Future (four items; e.g., “I complete projects on time by making steady progress.”; $\alpha_{S1} = 0.73, \alpha_{S2} = 0.74$) based on a 5-point Likert type scale (1 = Very Untrue; 2 = Untrue; 3 = Neutral; 4 = True; 5 = Very true). As the Cronbach alpha values were unsatisfactory in the case of PPTP and PFTP, inter-item correlations (IIC; *Clark & Watson, 1995*) were also calculated which showed adequate reliabilities: FTP (IIC_{S1} = 0.40, IIC_{S2} = 0.42), PNTTP (IIC_{S1} = 0.47,

¹ Participants were removed for the following reasons: they did not wish to participate in this study or had the same answer to every questionnaire item.

IIC_{S2} = 0.46), PPTP (IIC_{S1} = 0.33, IIC_{S2} = 0.36), PHTP (IIC_{S1} = 0.54, IIC_{S2} = 0.50), and PFTP (IIC_{S1} = 0.27, IIC_{S2} = 0.26).

Vallerand et al.'s (1992) *Academic Motivation Scale* (AMS) for high school samples was translated and adapted to Hungarian samples by Orosz et al. (2013). In this version students respond to the question of "Why do you go to school?". On the basis of a prior study (Orosz et al., 2013), only three factors were identified reliably (instead of the original seven factors). First, intrinsic motivation to know which refers to pleasure and the satisfaction determined learning/academic behavior (three items; e.g., "Because I experience pleasure and satisfaction while learning new things."; $\alpha_{S1} = 0.85$, $\alpha_{S2} = 0.87$). Second, extrinsic motivation of external regulation refers to the rewards or constraints determining learning/academic behavior (4 items, e.g., "In order to obtain a more prestigious job later on."; $\alpha_{S1} = 0.77$, $\alpha_{S2} = 0.83$). Third, amotivation refers to the incompetency regarding the learning/academic activity and actual or provisional lack of participation in the academic activity (four items, e.g., "I don't know; I can't understand what I am doing in school."; $\alpha_{S1} = 0.82$, $\alpha_{S2} = 0.88$). The response choices for these items were rated on a 7-point Likert scale (1 = Does not correspond at all; 2–3 = Correspond a little; 4 = Corresponds moderately; 5–6 = Corresponds a lot; 7 = Corresponds exactly).

2.3. Statistical analysis

Preliminary statistical analyses were performed with SPSS version 17 and comprised of descriptive statistical analysis such as the investigation of means, standard deviations, and Pearson correlations between the measured variables (see Table 1). Internal consistencies were also assessed by Cronbach alpha coefficient (α) which was acceptable if the values were at least 0.70 and good if the values are above 0.80 (Nunnally, 1978). However, as the low number of items on a scale can influence internal consistency, the criteria for Cronbach alpha coefficients should be relaxed (Cortina, 1993; Nunnally & Bernstein, 1994). Inter-item correlations were also calculated as an additional index of reliability with values between 0.15 and 0.50 being acceptable (Clark & Watson, 1995).

In order to examine the relationship patterns of the above-mentioned questionnaires, structural equation modeling was employed using Mplus 7.3 (Muthén & Muthén, 1998–2015). When assessing the models, multiple goodness of fit indices were observed (Brown, 2015) with good or acceptable values based on the following thresholds (Bentler, 1990; Brown, 2015; Browne & Cudeck, 1993; Hu & Bentler, 1999; Schermelleh-Engel et al., 2003): the Comparative Fit Index (CFI; ≥ 0.95 for good, ≥ 0.90 for acceptable), the Root-Mean-Square Error of Approximation (RMSEA; ≤ 0.06 for good, ≤ 0.08 for acceptable) with its 90% confidence interval and the Standardized Root Mean Square Residuals (SRMR; ≤ 0.05 for good, ≤ 0.10 for acceptable).

In the case of Academic Dishonesty Scale, parcels were used as indicators because this variable contained too many items relative to the

number of participants. The usage of parcels can be justifiable if the scales are theoretically unidimensional (Bandalos & Finney, 2001; Little, Cunningham, Shahar, & Widaman, 2002; Matsunaga, 2008). Additionally, previous studies also applied this method when multiple latent variables were present in the model (e.g., Carbonneau, Vallerand, Fernet, & Guay, 2008). Parcel use could also minimize the issues related to non-normally distributed data and could result in better fitting solutions for unidimensional constructs (Bandalos, 2002; Matsunaga, 2008).

When creating parcels, four different algorithms were suggested by Rogers and Schmitt (2004). In the present case, the factorial algorithm was chosen and employed as it aims to replicate the factor structure in each parcels. First, exploratory factor analysis (principal axis factoring with promax rotation) was performed on the items which resulted in different factor loadings ranked from the highest to smallest. Items were then sequentially combined into parcels: items with the highest and the lowest factor loadings were assigned to a parcel by alternating the direction of item-choosing. For Sample 1, items 7, 9 and 10 were aggregated into parcel 1, items 2, 3 and 6 into parcel 2, items 8, 5, 4 and 1 into parcel 3. As for Sample 2, items 6, 3 and 10 were aggregated into parcel 1, items 9, 1 and 4 were aggregated into parcel 2, and items 8, 5, 2 and 7 were aggregated into parcel 3.

3. Results

Two models were tested with the same variables on two separate samples; the direct and indirect relationships were also tested (see Fig. 1 for Sample 1 and Fig. 2 for Sample 2). According to the final models (Sample 1: CFI = 0.91, RMSEA = 0.05, 90% CI 0.04–0.06, SRMR = 0.06; Sample 2: CFI = 0.90, RMSEA = 0.06, 90% CI 0.05–0.06, SRMR = 0.07), several similar relationship patterns were identified. In both models, FTP was positively and directly related to the extrinsic motivation ER factor ($\beta_1 = 0.26$, $\beta_2 = 0.44$) and to the intrinsic motivation TK factor ($\beta_1 = 0.38$, $\beta_2 = 0.48$), while it was directly and negatively related to amotivation ($\beta_1 = -0.35$, $\beta_2 = -0.32$). It was directly and negatively academic dishonesty ($\beta_1 = -0.30$, $\beta_2 = -0.21$) as well. PHTP was positively and directly related to the extrinsic motivation ER factor ($\beta_1 = 0.17$, $\beta_2 = 0.25$), and it was also positively and directly related to academic dishonesty ($\beta_1 = 0.33$, $\beta_2 = 0.21$). PFTP was only positively and directly related to amotivation ($\beta_1 = 0.18$, $\beta_2 = 0.28$). Furthermore, amotivation was positively and directly related to academic dishonesty ($\beta_1 = 0.20$, $\beta_2 = 0.13$).

4. Discussion

The present results underlie the importance of time perspective in academic motivations and cheating. The two most relevant time perspective dimensions were Future TP and Present Hedonistic TP. These time perspectives were related both directly and indirectly to academic cheating. The mediating role of intrinsic motivation and amotivation

Table 1
Descriptive statistics, reliabilities and correlations between the examined variables on Sample 1 (S1) and Sample 2 (S2).

Variables	Observed range	Mean scores		Standard deviation		1	2	3	4	5	6	7	8	9
		S1	S2	S1	S2									
		1. Academic cheating	1–5	2.63	2.63									
2. Future TP	1–5	3.23	3.41	0.81	0.79	–0.34**	–	–0.13*	–0.01	–0.15*	–0.03	–0.27**	0.38**	0.15*
3. Past negative TP	1–5	2.83	2.98	0.98	0.98	0.01	–0.03	–	0.11	0.12	0.16*	0.01	–0.15*	–0.01
4. Past positive TP	1–5	3.56	3.63	0.81	0.85	–0.14**	0.27**	0.16**	–	0.21**	0.12*	–0.08	0.08	0.12
5. Present hedonistic TP	1–5	3.43	3.58	0.94	0.89	0.17**	–0.06	0.14**	0.26**	–	0.24**	0.09	0.08	0.16*
6. Present fatalistic TP	1–5	2.71	2.83	0.85	0.87	0.16**	–0.19**	0.22**	0.09	0.33**	–	0.19**	0.01	0.10
7. AMS amotivation	1–7	1.55	2.33	0.92	1.45	0.28**	–0.34**	0.13*	–0.11*	0.09	0.32**	–	–0.35**	–0.01
8. AMS intrinsic motivation TK	1–7	4.46	4.33	1.38	1.46	–0.32**	0.43**	–0.03	0.23**	0.09	–0.03	–0.25**	–	0.25**
9. AMS extrinsic motivation ER	1–7	3.36	5.86	1.34	1.14	–0.20**	0.31**	–0.03	0.09	0.15**	–0.01	–0.34**	0.41**	–

Notes. S1 = Sample 1; S2 = Sample 2; values above the diagonal are correlations based on Sample 1; values below the diagonal are correlations based on Sample 2.

* $p < 0.05$.

** $p < 0.01$.

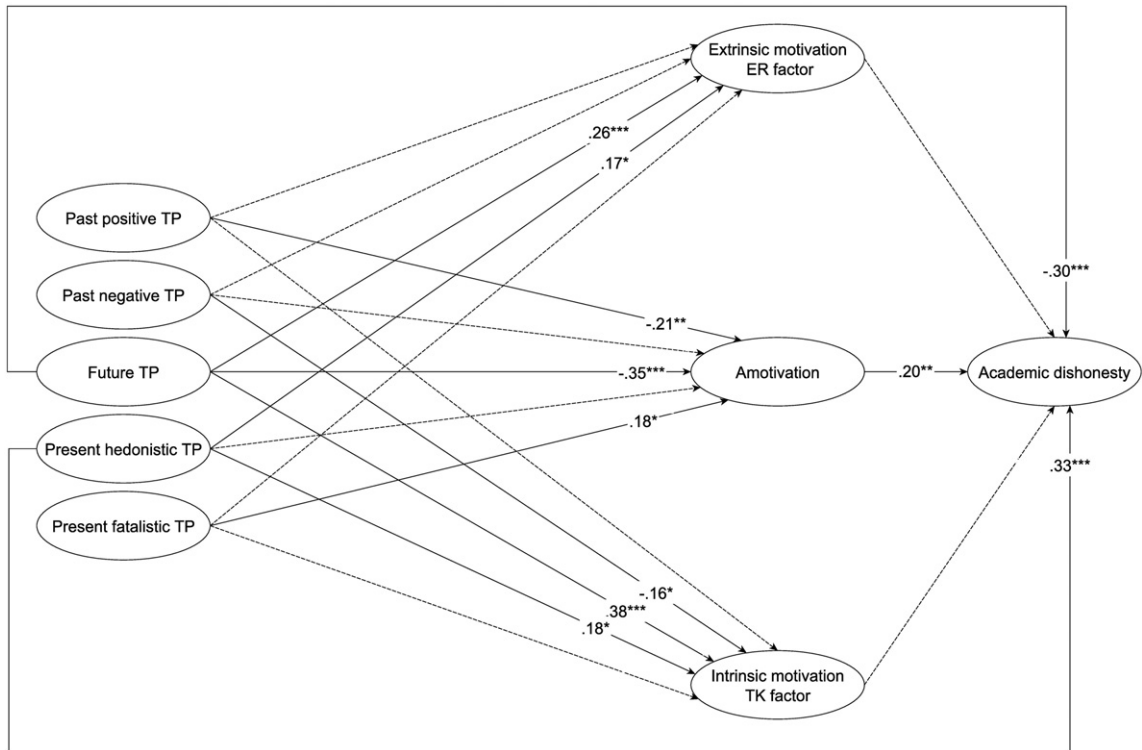


Fig. 1. Results of the mediation model of time perspective, academic motivations and academic dishonesty on Sample 1. For clarity, covariances between the variables have not been depicted in the figure. Simple arrows represent significant coefficients, dashed arrows represent non-significant coefficients. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

between Future TP and cheating was in line with our expectations. However, we found that Present hedonistic TP was only directly related to cheating. These identified relationship patterns can shed light on the mechanisms regarding how time perspective can influence academic cheating.

What can explain the mediating role of academic motivations in the case of Future TP and the lack of this mediation regarding Present hedonistic TP? Future TP is not only related to intrinsic motivation, but to lower cheating occurrences. Regarding this pattern from the perspective of Future TP, several possible explanations are available.

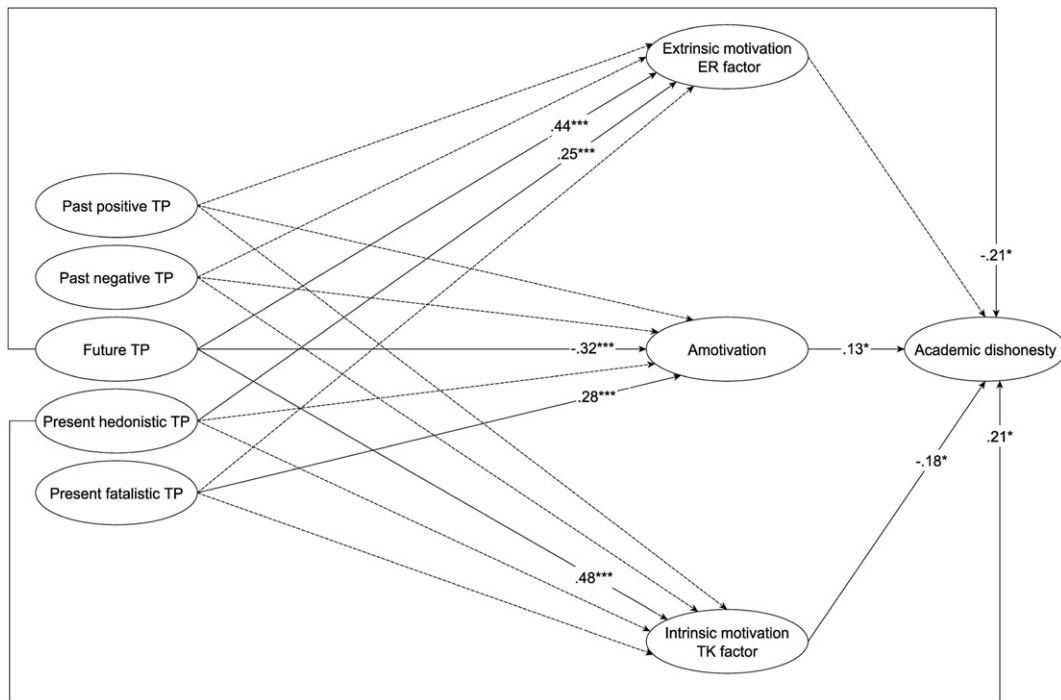


Fig. 2. Results of the mediation model of time perspective, academic motivations and academic dishonesty on Sample 2. For clarity, covariances between the variables have not been depicted in the figure. Simple arrows represent significant coefficients, dashed arrows represent non-significant coefficients. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

First, considering long-term consequences of cheating—getting caught during the exam and being punished for the bad grades or reduced reputation from the perspective of the teacher or parents—can prevent students from cheating. Similar risky behaviors leading to potential negative future consequences as smoking, drinking, risky driving and substance use were also negatively related to Future TP (Keough et al., 1999; Zimbardo, Keough, & Boyd, 1997). However, for the exploration of the link between Future TP and the proximal, risk aversive cheating-related variables subsequent studies are needed.

Second, compared to other links of the model, the link between Future TP and intrinsic motivation was relatively strong suggesting that focusing on future goals is strongly related to the interest and joy related to learning. Based on prior research (Bembenutty & Karabenick, 2004; De Bilde et al., 2011; Kauffman & Husman, 2004) one may suppose that striving for long term goals and delaying gratification are needed to master the given study material. Therefore, future oriented students who spend a lot of time with learning and with mastering in study-related fields can find joy and interest in the learning process more easily and they can have higher intrinsic motivation which can lead to lower cheating rate.

Third, from the perspective of amotivation, those students who can hardly keep deadlines, meet their school-related obligations or resist temptations when they should revise for a test will see less contingencies between study outcomes and their learning behavior and finally they will feel more incompetent and in this situation cheating can appear to be a promising solution to accomplish the given assignment. It is possible that continuous persistent work and spending more time with engaging in future goal completion can give more possibility to experience contingencies between the learning behavior and its positive results which can lead to higher perceived competencies and less cheating.

Fourth, in two previous Hungarian cheating-related studies (Orosz et al., 2013; Orosz et al., 2015) no links were found between cheating and extrinsic motivations. Similarly to the present study, students were asked about why they go to school with the following items “*In order to obtain a more prestigious job later*” or “*Because I want to have ‘the good life’ later on.*”. All of the items include a positive future-orientation in terms of focusing on long-term rewards determining learning behavior. However, the Future TP items refer mainly to the short term aspects focusing on the given situation as “*I complete projects on time by making steady progress.*” or “*I am able to resist temptation when I know that there is work to be done.*”. These items refer explicitly to making efforts for achieving future goals, but the emphasis is on the process instead of the goals or results in the far future. Considering the results of previous studies (Orosz et al., 2013; Orosz et al., 2015) and the present study the process-orientation (Future TP) vs. result-orientation (extrinsic motivation) regarding future goal pursuit make a notable difference in terms of academic cheating. In sum, focusing on the process of the farther goal pursuit combined with delay of gratification can lead to reduced cheating, whereas focusing on future goal results is either unrelated to cheating (see Hungarian results) or positively related to it (Angell, 2006).

Contrary to complementary mediation of motivations between Future TP and cheating, Present hedonistic TP was only directly related to cheating irrespectively to academic motivations. Considering that present hedonistic TP was unrelated to amotivation, we suppose that focusing on immediate gains of cheating, risk taking and being distracted by pleasurable activities overrides the importance of whether a student is amotivated or not.

First, Present hedonistic students, in the haste of the moment when they do not know a response to a test question, might think through less the potential consequences of the cheating behavior. Second, they might value risky behaviors as well and cheating is inherently risky in terms of being caught and punished. Third, present hedonistic students might have a vivid social life and put emphasis on enjoying their life. Therefore—irrespectively to

whether they are amotivated—they spend a significant amount of time with social events, parties and other joyful activities which allows less time spent with learning and it can lead to higher cheating occurrences.

In line with prior research the other present time perspective factor was also related to cheating through the mediation of amotivation. Present fatalism lacks the focus on excitement of hedonism, and it reflects on the resignation and beliefs in fate (Zimbardo & Boyd, 1999). Present fatalistic students are not motivated by extrinsic or intrinsic goals and present hedonistic students are motivated intrinsically or extrinsically. Present fatalistic students do not have the motivational resources to learn and as a result of it they do not prepare for exams and this can be the primary cause of cheating. However, Present hedonistic students are motivated to learn, but as a result of their impulsive and risk taking behavior they can be more easily inclined in cheating behavior. A previous study found that both present TPs are linked to dishonest behaviors as lying and stealing (Zimbardo & Boyd, 1999). However, on the basis of the present results the underlying mechanisms can be different. Present Hedonism contributes to acting such way in the haste of the moment, while Present fatalism contributes to such dishonest behaviors as a result of the insufficient motivational resources to reach their goals in an honest way.

There were some inconsistencies between the two models regarding the most important TP, motivational and cheating variables. First of all, in Sample 1 there are more significant relationships than in Sample 2. The differences between the two models were only related to weak correlations such as Past TPs were related to academic motivations in Sample 1, however this link was not significant in Sample 2. The most surprising inconsistency was related to the link between Intrinsic motivation and cheating. In the case of Sample 1 there was no significant link, whereas in Sample 2 in line with prior studies intrinsic motivation was negatively related to cheating (Anderman & Murdock, 2007; Orosz et al., 2013). This might be explained by the stronger links between TP dimensions and cheating in the case of Sample 1 that might suppress the relationship between intrinsic motivation and cheating.

Taking into account the link between time perspective dimensions and academic cheating, the transformation of TP can have beneficial effects in terms of academic motivations, performance or cheating of students if it is possible to reduce Present Hedonism and increase Future TP. The question arises: how can Time perspective of students be changed in order to reduce cheating and have other positive academic consequences.

Only a few preliminary studies have examined the malleability of TP. Zimbardo, Sword and Sword (2012) found that time perspective therapy among military veterans who suffer from PTSD was able to alter their negative pattern of TP (high Past Negative, low Past Positive, high Present Fatalistic TP, low Present Hedonistic TP, and low Future TP) in as few as eight sessions. As soon as the Present TP turned to be more positive as a consequence of the therapy, the perception of their future became more positive, which finally lead to decreased depression and anxiety. Zimbardo and Boyd (2008) outlined in some detail strategies for altering each TP in a more useful, flexible fashion. In sum, changing TP profile is possible. However, future studies are needed to explore whether making short term goals (which might be connected to present hedonism) can change students' time perspective that might have positive consequences in terms of enhancing academic motivations and performance, while reducing cheating.

This preliminary research has several limitations. As self-reported, cross-sectional methods were applied, possible biases have to be considered when interpreting the findings. Moreover, causality cannot be inferred from the present findings. Further measures are needed in future studies that could directly measure the respondent's cheating behaviors. Longitudinal studies are needed to investigate these patterns over a longer period of time, a semester for instance. Experimental designs could also be employed to investigate causality between the variables. The samples were Hungarian and not internationally

representative which limits the generalizability of the results. Further replication studies are needed in different cultural and age groups in order to draw a more solid conclusion about the relationship between TP, motivations and academic cheating. Considering the measures, relatively low internal consistencies were found regarding two TP scales. It is possible that these reduced Cronbach alpha values reduced the associations of these two subscales.

Despite these weaknesses, these results suggest that time perspective is a relevant personality-related variable in academic cheating research. We claim that increasing a student's Future TP can reduce cheating, while lowering Present Hedonistic TP can also reduce it—independently from other important, previously identified variables such as academic motivations and performance goals. Further research is needed to involve these further potential mediational variables and identify the relationship pattern of the related variables.

Conflict of interest

The authors declare no conflict of interest.

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