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EDINA DOMBI

MEASURING TIME PERSPECTIVE AND ITS INDIVIDUAL DIFFERENCES IN HUNGARY
THE DEVELOPMENT OF A NEW FUTURE TIME PERSPECTIVE SCALE

Summary of the PhD dissertation

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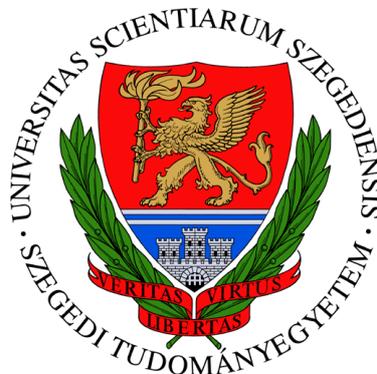
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The theoretical framework and the structure of the dissertation

Time perspective can be defined as a process in which individuals categorize their personal experiences automatically into the psychological framework of the past, the present or the future (*Zimbardo & Boyd,* 1999). It has a fundamental impact on human relations and the interpretation of events and can be learned early within the cultural, religious, social, educational and family contexts (*Zimbardo & Boyd,* 2008). Time perspective (IP) can therefore vary in terms of individual differences (*Boniwell & Zimbardo,* 2004; *Zimbardo & Boyd,* 1999; *Webster,* 2011), according to the individual's socioeconomic status (*Kruger, Reischl & Zimmerman,* 2008; *Guthrie, Butler & Ward,* 2009); and the cultural background can also influence it (*Sircova* et al, 2007; *Zimbardo & Boyd,* 2008). Time perspective is linked to a variety of personality features, habits, everyday activities and attitudes.

The Zimbardo Time Perspective Inventory (ZTPI; *Zimbardo* and *Boyd,* 1999) distinguishes five factors: past negative, past positive, present hedonistic, present fatalist and future-oriented. The past negative factor indicates a generally negative view on past memories. Past positive is a generally positive, hearty and emotional attitude towards one's memories of the past. Present hedonistic orientation can be characterized by focusing on pleasures and novelties, and ignoring future consequences. The present fatalist factor represents the belief in a foreseen future and the importance of fate. The future perspective can be characterized by the setting of future goals and the process of progression (*Zimbardo & Boyd,* 1999). The relationship between these dimensions and the different areas of life is subject to extensive studies (see *Stolarski, Fieulaine* and *Van Beek,* 2014). However, the personality-dependent variables behind the suboptimal and optimal patterns of time perspective (balanced and non-balanced time perspective) have been less explored so far.

In our research, we focus on the individual differences in time perspective. The aim of this dissertation is to explore the impact of time perspective on our behaviour and to demonstrate that time perspective is a complex factor of our personality that has a mediating effect on other personality traits, thus contributing to academic success, school behaviour and future goals. Moreover, the aim of our research is to make these results – obtained on a Hungarian sample – the basis for cross-cultural comparisons and for further studies.

In the theoretical chapters of the dissertation, the concept, dimensions, patterns and the psychological background of time perspective are described in detail. Then the measurement of time perspective, its personality correlates and the pedagogical relevance of this phenomenon will be described. Within the theoretical background, the application of time

perspective concepts, including the possibility of an intervention program, are discussed In the methodology chapters of the dissertation, the empirical research is introduced: the aims, the hypotheses of the examinations, the characteristics of the samples and the applied methods and procedures. These are followed by the results and the discussion of the different studies: first, the results of the adaptation of the ZTPI questionnaire, then the results of examining the relationship among school motivation, academic cheating, impulsiveness and time perspective. The fourth study focuses on balanced time perspective and ego-resiliency, while the fifth study concentrates on the future perspective and the development of a new future time perspective scale. Finally, there are two more chapters for the summary and for further research opportunities..

The studies presented in the dissertation are relevant in many aspects: one of our aims is the adaptation of a questionnaire that is widely used in many different cultures, thus allowing us for further cross-cultural research. Furthermore, transferring the concept of time perspective from psychological research to the field of pedagogy, drawing attention to its pedagogical relevance besides its cognitive and personality psychological significance and emphasizing that present and especially future orientation are significant factors of students' academic progress.

As far as we know, no previous research – neither Hungarian nor international – has studied the relationship among time perspective, impulsive behaviour, school motivation and academic cheating yet; moreover, the relationship between balanced time perspective and ego-resiliency has not been considered either.

As a result of our last presented study, we aimed to offer a new measurement for further research that focuses deeply on future orientation, being able to reveal how individuals are thinking about their future. Therefore this new scale can form the basis of further research on education, career choice or health behaviour. We believe that future studies on the future time perspective will receive more attention in terms of academic success and adaptive social behaviour. The changes in present and future orientation have a positive effect on life satisfaction and success in life, also contributing to achieving a balanced time perspective profile.

The aims and hypotheses of the studies presented in the dissertation

Five studies are presented in the dissertation with the aim of giving an overall picture of the research tasks and experiences of previous years. The first study presents the Hungarian adaptation of the Zimbardo Time Perspective Questionnaire (*Zimbardo & Boyd,* 1999). The second study consists of two parts: the first part of the study analysed the pattern of time perspective, impulsive behaviour, academic motivation and academic cheating. In the second part of the study, further research was conducted focusing on the present and future dimensions of time perspective in order to better understand its relationship with academic cheating and motivation. In the third study, particular attention was paid to the exploration of the relationship between impulsivity and the time perspective dimensions. Through these different studies, we gradually gained more and more information about the dynamics of time perspective and the characteristics of its dimensions. Our fourth research aimed at the cognition of a balanced time perspective profile, which is a balance between past, present and future perspectives. Based on the results of our studies, the role of future orientation among the five time perspectives has proved to be the most prominent; therefore, thefifth study focused on the exploration of this dimension. In the first part of this study, we examined the factor structure of the Future Time Perspective Scale (*Husman & Shell,* 2008). In the second part of the fifth study, a more comprehensive and multidimensional future perspective scale was developed in order to have a more precise questionnaire for further research on future orientation. The aims and hypotheses of our studies are shown in Table 1.

Table 1: Aims and hypotheses

	Title of research	Aim of research	Hypotheses
I.	The Hungarian adaptation of the Time Perspective Inventory	The Hungarian adaptation of the ZTPI which has good psychometric properties both in terms of internal consistency and factor structure. Another aim is to examine the test-retest reliability of the Hungarian ZTPI.	It is hypothesized that 1. the exploratory factor analysis yields a five-factor structure model where the items have high factor loadings and small cross loadings (*Hu & Bentler*, 1999). 2. the model obtained in the confirmatory factor analysis has suitable model fit indices according to the criteria (*Brown*, 2006). 3. the internal consistency of the items of the scale meets the criteria (*Nunnally*, 1978). 4. the Hungarian version of the ZTPI has good temporal stability.
II/1.	The study of time perspective theory in relation to academic motivation, academic cheating and impulsivity	We aim to examine the relationship between time perspective and academic cheating, and to explore the relationship pattern among time perspective, impulsivity and academic motivation.	It is hypothesized that 1. using multiple hierarchical regression analyses impulsivity will be positively linked to academic cheating (*Anderman* et al., 2010; *Baumann & Odum*, 2012). 2. intrinsic motivation will be negatively linked to academic cheating (*Anderman, Griesinger* and *Westerfield*, 1998; *Jordan*, 2001). 3. amotivation will be positively linked to academic cheating (*Vallerand* et al, 1992). 4. extrinsic motivation will be unrelated to academic cheating behaviour (*Anderman, Griesinger* and *Westerfield*, 1998; *Jordan*, 2001). 5. future time perspective will be negatively related to academic cheating. 6. present hedonistic time perspective will be positively related to academic cheating. 7. time perspective dimensions can predict academic cheating independently from motivation- and impulsivity related variables.
II/2.		We aim to investigate how time perspective influence academic cheating; to support the previous results of study II/1. and to explore the direct and indirect effects of time perspective.	It is hypothesized that 1. intrinsic motivation is negatively related to cheating (*Weiss* et al, 1993; *Anderman* et al, 1998; *Orosz* et al, 2015; *Pulvers & Diekhoff*, 1999; *Wryobeck & Whitley,* 1999; *Jordan*, 2001; *Anderman & Murdock,* 2007). 2. amotivation has a direct positive effect on cheating behaviour (*Angell*, 2006; *Orosz* et al, 2015). 3. future time perspective is negatively related to cheating behaviour through intrinsic motivation (*De Bilde*, 2011). 4. future time perspective is negatively related to amotivation which predicts cheating (on the basis of the results of study II/1). 5. future time perspective can be accounted for less cheating (on the basis of the results of study II/1). 6. present hedonistic time perspective has a direct effect on cheating (on the basis of the results of study II/1). 7. present hedonistic time perspective has an indirect effect – through intrinsic motivation and amotivation – on cheating (on the basis of the results of study II/1).

III.	Examining the relationship between time perspective theory and impulsivity	We aim to get a better picture of the relationship between impulsivity and time perspective: which factors of impulsivity – and to what extent – can predict the five dimensions of time perspective.	It is hypothesized that 1. present hedonism is most often predicted by sensation seeking, urgency and the lack of premeditation (*Mischel, Shoda* and *Rodriguez,* 1989; *Whiteside & Lynam,* 2001). 2. present fatalism is mostly predicted by the lack of perseverance from the impulsivity dimensions (*Zimbardo & Boyd,* 1999). 3. past negative and past positive orientation is not predicted by the dimensions of impulsivity (*Zimbardo & Boyd,* 1999). 4. future orientation is negatively related to the dimensions of impulsivity (*Adams & Nettle,* 2009; *Zimbardo & Boyd,* 1999).
IV.	Examining the relationship between balanced time perspective and ego-resiliency	We aim to identify ego-resiliency as a personality-related background variable, which is responsible for balanced time perspective.	It is hypothesized that 1. ego-resiliency is negatively related to past negative time perspective. 2. ego-resiliency is positively related to past positive time perspective. 3. ego-resiliency is positively related to present hedonistic time perspective. 4. ego-resiliency is negatively related to present fatalistic time perspective. 5. ego-resiliency is positively related to future time perspective. 6. stronger relationship can be measured between ego-resiliency dimensions of *active engagement with the world* and *broad repertoire of problem solving strategies* with time perspective factors than in the case of *integrated performance under stress* (*Block,* 2002; *Block & Block,* 1980).
V/1.	The adaptation of the Future Time Perspective Scale and the development of a new future perspective scale.	We aim to examine the factor structure of the Future Time Perspective Scale (*Husman & Shell,* 2008) via confirmatory factor analysis (CFA).	It is hypothesized that 1. CFA analysis yields a four-factor structure model where the items have high factor loadings and small cross loadings (*Hu & Bentler,* 1999). 2. the model obtained in the CFA analysis has suitable model fit indices according to the criteria (*Brown,* 2006). 3. the internal consistency of the items of the scale meets the criteria (*Nunnally,* 1978).
V/2.		We aim to create a new scale – the Self in the Future Scale – which grasps the involvement of the present self in the future. To examine whether the supposed factor structure shows acceptable model fit by using CFA, and to assess the convergent validity of the Self in the Future Scale by correlating it with the ZTPI.	It is hypothesized that 1. the connection between the present self and the future can be grasped in a multidimensional manner which has both positive and negative aspects (*Carelli* et al, 2011; *Ajzen & Madden,* 1986; *Bandura,* 1978; *Prenda & Lachman,* 2001; *Hofstede,* 1980; *Boniwell,* 2005). 2. CFA analysis yields a five-factor structure model where the items have high factor loadings and small cross loadings (*Hu & Bentler,* 1999). 3. the model obtained in the CFA analysis has suitable model fit indices according to the criteria (*Brown,* 2006). 4. the internal consistency of the items of the scale meets the criteria (*Nunnally,* 1978). 5. the future time perspective of the ZTPI is related only to *Time management* but unrelated to the other four dimensions.

The characteristics of the sample

The characteristics of the participants in our studies are shown in Table 2. In case of the first four studies, non-probability (convenience) sampling was used. For the preparation of the sample in the fifth study, a multiple-step, proportionally stratified, probabilistic sampling method was employed. All studies were conducted in accordance with the Declaration of Helsinki and were approved by the ethical board of the university.

A total of 3709 participants completed the short version of the Zimbardo Time Perspective Inventory. In the following five studies, we examined the factor structure and reliability of the scale (first study), its relationship to academic motivation, academic cheating (second study), impulsivity (third study) and ego-resiliency (fourth study), and its correlation to a new future perspective scale (fifth study).

Table 2: The characteristics of the participants, measures and procedure

	Title of research	Sample	Measures	Procedure
I.	The Hungarian adaptation of the Time Perspective Inventory	1370 respondents (941 female/424 male), 5 with no indication of their gender. Age: 13–86 years (M_{age} = 32.24; SD_{age} = 14.66), 13 with no indication of their age.	Zimbardo Time Perspective Inventory (ZTPI; *Zimbardo* & *Boyd*, 1999).	Data were collected online.
II/1.	The study of time perspective theory in relation to academic motivation, academic cheating and impulsivity	252 respondents (152 female/96 male), 4 with no indication of their gender. Age: 14–19 years (M_{age} = 16.5, SD_{age} = 1.16).	Short Hungarian version of the Zimbardo Time Perspective Inventory (*Orosz* et al, 2017). Academic Dishonesty Scale (*McCabe* & *Trevino*, 1997). Academic Motivation Scale (AMS; *Vallerand* et al, 1992).	Data were collected online in the classroom.
II/2.		371 respondents (197 female/174 male). Age: 14–18 years (M_{age} = 16.56; SD_{age} = 1.18).		
III.	Examining the relationship between time perspective theory and impulsivity	1070 respondents (665 female/405 male). Age: 14–65 years (M_{age} = 19.69, SD_{age} = 5.62).	Short Hungarian version of the Zimbardo Time Perspective Inventory (*Orosz* et al, 2017). UPPS Impulsive Behavior Scale (UPPS; *Whiteside* & *Lynam*, 2001).	Data were collected online.
IV.	Examining the relationship between balanced time perspective and ego-resiliency	775 respondents (508 female/267 male). Age: 18–61 years (M_{age} = 25.11, SD_{age} = 8.32).	Short Hungarian version of the Zimbardo Time Perspective Inventory (*Orosz* et al, 2017). Ego-resiliency Questionnaire (ER89; *Block* & *Kremen*, 1996; Hungarian validation *Farkas* & *Orosz*, 2015).	Data were collected online.
V/1.	The adaptation of the Future Time Perspective Scale and the development of a new future perspective scale	605 respondents (309 female/296 male). Age: 18–60 years (M_{age} = 38.99, SD_{age} = 12.51).	Future Time Perspective Scale (FTP; *Husman* & *Shell*, 2008). Self in the Future Scale (SFS).	Data were collected online.
V/2.		242 respondents (180 female/62 male). Age: 14–58 years (M_{age} = 26.22; SD_{age} = 8.60).		

<center>**Summary of the research results for each study**</center>

The aim of the theoretical review in the dissertation was to introduce the theory of time perspective and to explore those areas that could be of interest for further studies. In the theoretical chapters of the dissertation, a review was presented about the conceptual definitions; then the most important research topics and results that have been studied in relation to time perspective theory in the past were presented.

Based on the underlying international results and studies, we tried to find those variables which can be studied in the Hungarian cultural context and are relevant for further cross-cultural comparisons. Therefore, the relevance of our research is demonstrated by existing international results, from which we can conclude that time perspective is a complex and comprehensive factor in personality having a mediating effect on many other personality-related variables as well.

Study 1

The purpose of the first study is the validation of the most commonly used questionnaire for measuring time perspective, the Zimbardo Time Perspective Inventory (ZTPI). We aimed to find a factorial structure that provides appropriate results in terms of CFA and Cronbach's alphas in the Hungarian version of ZTPI.

In the exploratory factor analysis (EFA), principal axis factoring was performed, which resulted the five factor structure, including past positive, past negative, present hedonistic, present fatalistic and future factors. Then three models were tested by confirmatory factor analysis (CFA): the original five-factor model including 56 items, then a second model created by *Sircova* et al. (2014) including 36 items, and finally a new model including 17 items which meets the previously detailed criteria. Our research suggests that a longer version of ZTPI is relatively inadequate to the CFA model, and many times the results of the exploratory factor analysis (EFA) did not fit the original model. However, shortened versions are characterized by internal inconsistencies. One of the possible explanations for the psychometric weaknesses of ZTPI may be that the scale is based on the concept of time perspective, which is a huge and comprehensive concept that affects many different areas of life. Another potential reason is related to the past positive and past negative factors which have reverse items. The cross-loading of reverse past positive items on past negative factors can reduce the CFA model fit. In order to overcome these difficulties we aimed to select the

most appropriate items which represent the five factors of ZTPI properly. After testing these three models, the 17-item model provided the best results in terms of internal consistency and model fit indices compared to the other two models. We also aimed to examine the test-retest reliability of the Hungarian ZTPI.

All in all, the objectives of our research were realized, a shortened Hungarian version of the Zimbardo Time Perspective Inventory was created that has good psychometric properties in terms of internal consistency, model fit indices and test-retest reliability.

Study 2

The aim of the second study presented in the dissertation was to explore the relationship among time perspective, academic motivation and academic cheating, and to explore the relationship pattern among time perspective, impulsivity and academic motivation. As far as we know, there has been no research which has previously examined the relationship between time perspective and cheating behaviour. The purpose of the dissertation was to explore this pattern of relationship in a way that takes into account the previously revealed predictors of cheating behaviour, such as academic motivation. Nevertheless, no previous research has taken into account the impact of time perspective in the context of impulsivity, academic motivation and cheating. Based on the presented analyses, we have come to the conclusion that future time perspective is negatively related to cheating, whereas present hedonistic time perspective is positively related to it. The second study shows that future time perspective is related to cheating behaviour through intrinsic motivation and amotivation. However, the present hedonistic time perspective is directly linked to academic cheating.

Taking into account the relationship between time perspective dimensions and academic cheating, the transformation of time perspective may have beneficial effects on students' motivation, performance and cheating behaviour if we reduce present hedonism and increase future orientation. In this case, the following question arises: how can be the time perspective of students changed in order to reduce cheating and have other positive academic consequences? *Zimbardo* and *Boyd* (2008) mention some strategies for changing the time perspective pattern, but no specific intervention has been developed so far. Therefore, in the future, an interesting way of research for us is to examine how time perspective intervention could be used in education and school psychology counselling. Future research is needed to find out whether short-term goals (which can be linked to present hedonism) are able to

change the time perspective profile of students, which can have positive consequences such as increased motivation and school performance, and reduced cheating behaviour.

Study 3

The purpose of the dissertation was to find out how time perspective is related to different personality dimensions. We focused on those features which have pedagogical relevance. Among them, the features of impulsivity and ego-resiliency can be highlighted. Despite the fact that delay gratification and impulsivity control are key phenomenon of the present and future dimensions of time perspective, no previous research has revealed the relationship between impulsivity and time perspective yet.

In the third study, structural equation modelling was used to explore the possible relationship pattern of the time perspective factors and impulsivity. According to our results, present hedonism is strongly predicted by sensation seeking and the lack of premeditation, while it is less affected by urgency and not affected by the lack of perseverance. This result is in line with the results of *Mischel, Shoda* and *Rodriguez* (1989) and *Whiteside* and *Lynam* (2001). In case of present fatalism – based on *Zimbardo* and *Boyd* (1999) –, it was assumed that among the dimensions of impulsivity, the lack of perseverance will predict it. It is supported by our results, but also the factor of urgency and the lack of perseverance proved to be significant predictors.

It was hypothesized that the past negative and past positive orientations are not predicted by the dimensions of impulsivity (*Zimbardo* and *Boyd*, 1999), but this was only confirmed in case of the past positive dimension. Past negative orientation is only predicted by urgency among the dimensions of impulsivity. In the case of future orientation, we expected a negative relationship with the dimensions of impulsivity (*Adams* and *Nettle*, 2009, *Zimbardo* and *Boyd*, 1999), which is confirmed in the case of three dimensions – lack of perseverance, sensation seeking and urgency –, but the lack of premeditation is not related to future orientation.

Similarly to Study 2, it is confirmed that the four factors of impulsivity have significant explanatory power in case of present hedonism and future orientation. This result confirms our earlier assumptions and it is in line with the research results of *Metcalfe* and *Mischel* (1999). As we know from earlier research, impulsive behaviour is one of the reasons behind learning difficulties (*Shoda, Mischel* and *Peake,* 1990); furthermore, risky behaviour and impulsivity are also related. So for further research and for possible intervention

programs, examining time orientation of students with learning difficulties can be justified. Moderating present hedonism and strengthening future orientation can be complementary techniques for managing learning difficulties. Thus, the relationship among impulsivity, time perspective and learning difficulties should be reinforced by experimental methods in further research.

Study 4

Examining time perspective patterns provides an opportunity to explore balanced and non-balanced time perspective profiles. Several studies have shown the positive consequences of a balanced time perspective (BTP) earlier, but we do not know what personality traits or characteristics can stand behind a balanced time perspective profile. In this study, we aimed to explore whether ego-resiliency can be a key factor behind a balanced time perspective profile.

The fourth study presented in the dissertation was designed to investigate the effect of ego-resiliency (ER, *Block,* 2002, *Block & Block,* 1980), which facilitates flexible switching among the different time perspectives, leading to a balanced time perspective. In our research, ego-resiliency was identified as one of the key personality variables, which plays an important role in the development of an optimal pattern of the five dimensions of ZTPI. The variable- and person-centred analyses showed that the following two facets of ego-resiliency are relevant: active engagement with the world and broad repertoire of problem solving strategies. These two dimensions of ego-resiliency appear to contribute to the flexibility needed to change between prioritized time zones in order to behave adaptively in the ever-changing environment. Future studies should examine how ego-resiliency can be developed, and trained in many people, in order to expand the number of those people who have balanced time perspective.

Study 5

The aim of the last study was to establish a multidimensional future perspective scale that has a suitable factor structure and covers a significant part of beliefs and attitudes about the future. This study involves two researches: (1) we examined the factor structure of an existing future time perspective scale (Future Time Perspective Scale by *Husman & Shell,* 2008), (2) and then we created a new scale (Self in the Future Scale; SFS) which can provide an alternative and broader interpretation of how individuals conceptualize their future. The links

between the dimensions of the Self in the Future Scale and the ZTPI might be of interest regarding that future time perspective of the ZTPI is related only to the Time management factor of the new scale, but unrelated to the other four dimensions. Considering this and the fact that all factors of the new scale are related to a general future time perspective construct, we can assume that the ZTPI does not grasp completely how individuals conceptualize future and alternative dimensions can be also separated regarding how individuals perceive and interpret their future. However, it does not take anything from the merits of the ZTPI which was originally designed to grasp an overall time perspective including past and present elements, as well. Future studies can explore how the factors of the Self in the Future Scale are related to different personality dimensions and individual differences.

As a result of the scale development, the Self in the Future Scale – including Positive future, Control of the Future, Uncertainty about the future, Time Management, and Lack of Self-efficacy – shows appropriate factor structure, good internal consistency, and meaningful relationship pattern with the most common time perspective measure (ZTPI). It provides possibilities for future studies aiming to examine this multifaceted construct in relation to education-, work-, and health-related issues.

Further research

Little is known about the developmental psychological framework of time perspective and the time orientation of children, due to the relatively small number of international research which was carried out on non-adult samples. It would be necessary to explore this in the future. Therefore, our research with high school students is novel and adds to the value of the dissertation.

The thorough knowledge of time perspective and its impact on other personality variables can help us develop a carefully planned intervention program that will focus on changing and correcting the individual's time perspective profile. There is a small number of such studies and experiments in use, so it could be part of our future plans.

The research presented in the dissertation is also suitable to serve as a basis for social psychological interventions that can be implemented in the educational environment and help students to balance their time perspective, thus increasing their success and effectiveness in learning. In this way, the dissertation contributes to the pedagogical, cognitive psychological and personality psychological applicability of the theory of time perspective.

References

Adams, J. & Nettle, D. (2009): Time perspective, personality and smoking, body mass, and physical activity: An empirical study. *British Journal of Health Psychology,* **14**. 83–105.

Ajzen, I. & Madden, T. J. (1986): Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, **22.** 5. 453-474. doi: 10.1016/0022-1031(86)90045-4

Anderman, E. M., Cupp P. K. & Lane, D. (2010): Impulsivity and Academic Cheating. *The Journal of Experimental Education,* **78.** 135-150.

Anderman, E. M., Griesinger, T. & Westerfield, G. (1998): Motivation and cheating during early adolescence. *Journal of Educational Psychology,* **90.** 84–93.

Anderman, E. M. & Murdock, T. (2007): *Psychology of academic cheating.* Elsevier, San Diego.

Angell, L. R. (2006): The relationship of impulsiveness, personal efficacy, and academic motivation to college cheating. *College Student Journal,* **40.** 1.

Bandura, A. (1978): Reflections on self-efficacy. *Advances in Behavior Research and Therapy*, **1.** 4. 237-269.

Baumann, A. A. & Odum, A. L. (2012): Impulsivity, risk taking, and timing. *Behavioural Processes,* **90**. 408-414.

Block, J. (2002): *Personality as an affect-processing system: Toward an integrative theory.* Psychology Press.

Block, J. H. & Block, J. (1980): *The role of ego-control and ego-resiliency in the organization of behavior.* Volume 13. 39-101. Development of cognition, affect, and social relations: The Minnesota symposia on child psychology, NJ: Erlbaum, Hillsdale.

Block, J. H., Kremen, A. M. (1996): IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology,* **70**. 349–361.

Boniwell, I. (2005): Beyond time management: How the latest research on time perspective and perceived time use can assist clients with time-related concerns. *International Journal of Evidence Based Coaching and Mentoring*, **3**. 2. 61-74.

Boniwell, I. & Zimbardo, P. G. (2004): Balancing one's time perspective in pursuit of optimal functioning. In: Linley, P. A. & Joseph, S. (ed.): *Positive psychology in practice.* NJ: Wiley, Hoboken 165-180.

Brown, T. A. (2006): *Confirmatory factor analysis for applied research (second edition).* NY: Guilford Press, New York.

Carelli, M. G., Wiberg, B. & Wiberg, M. (2011): Development and construct validation of the Swedish Zimbardo Time Perspective Inventory. *European Journal of Psychological Assessment*, **27.** 4. 220-227. doi: 10.1027/1015-5759/a000076.

De Bilde, J., Vansteenkiste, M. & Lens, W. (2011): Understanding the association between future time perspective and self-regulated learning through the lens of self-determination theory. *Learning and Instruction,* **32.** 332-344.

Farkas, D. & Orosz, G. (2015): Ego-resiliency Reloaded: A Three-Component Model of General Resiliency. *PLOS ONE*, **10.** 3. e0120883.

Guthrie, L. C., Butler, S. C. & Ward, M. M. (2009): Time perspective and socioeconomic status: A link to socioeconomic disparities in health? *Social Science & Medicine,* **68.** 12. 2145–2151. doi: 10.1016/j.socscimed.2009.04.004

Hofstede, G. (1980): *Culture's consequences*. CA: Sage Publications, Beverly Hills.

Hu, L. & Bentler, P. M. (1999): Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling,* **6.** 1. 1-55. doi: 10.1080/10705519909540118

Husman, J. & Shell, D. F. (2008): Beliefs and Perceptions about the Future: A Measurement of Future Time Perspective. *Learning and Individual Differences,* **18.** 2. 166-175.doi:10.1016/j.lindif.2007.08.001

Jordan, A. E. (2001): College student cheating: The role of motivation, perceived norms, attitudes, and knowledge of institutional policy. *Ethics & Behavior*, **11.** 3. 233-247.

Kruger, D. J., Reischl, T. & Zimmerman, M. A. (2008): Time perspective as a mechanism for functional developmental adaptation. *Journal of Social, Evolutionary, and Cultural Psychology,* **2.** 1. 1-22. doi: 10.1037/h0099336

McCabe, D. L. & Trevino, L. K. (1997): Individual and contextual influences on academic dishonesty: A multi-campus investigation. *Research in Higher Education,* **38.** 3. 379-396.

Metcalfe, J. & Mischel, W. (1999): A hot/cool-system analysis of delay of gratification: dynamics of willpower. *Psychological review*, **106.** 1. 3.

Mischel, W., Shoda, Y. & Rodriguez, M. L. (1989): Delay of gratification in children. *Science*, **244.** 4907. 933-938.

Nunnally, J. C. (1978): *Psychometric theory (2d ed.). McGraw-Hill series in psychology.* McGraw-Hill, New York.

Orosz, G., Dombi, E., Tóth-Király, I. & Roland-Lévy, C. (2015): The Less is More: The 17-Item Zimbardo Time Perspective Inventory. *Current Psychology*, 1-9. doi: 10.1007/s12144-015-9382-2.

Orosz, G., Zimbardo, P. G., Bőthe, B. & Tóth-Király, I. (2017): The paradoxical effect of climate on time perspective considering resource accumulation. *Behavioral and Brain Sciences*, **40.**

Prenda, K. M. & Lachman, M. E. (2001): Planning for the future: a life management strategy for increasing control and life satisfaction in adulthood. *Psychology and Aging*, **16***. 2. 206-216. doi: 10.1037/0882-7974.16.2.206

Pulvers, K. & Diekhoff, G. M. (1999): The relationship between academic dishonesty and college classroom environment. *Research in Higher Education*, **40.** 4. 487-498.

Shoda, Y., Mischel, W. & Peake, P. K. (1990): Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification. *Developmental Psychology,* **26.** 978-986.

Sircova, A., van de Vijver, F. J., Osin, E., Milfont, T. L., Fieulaine, N., Kislali-Erginbilgic, A. & Davydova, I. (2014): A global look at time a 24-country study of the equivalence of the Zimbardo Time Perspective Inventory. *Sage Open*, **4.** 1. doi: 10.1177/2158244013515686

Stolarski, M., Fieulaine, N. & Beek, W. (2014): *Handbook Time Perspective*. Springer.

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briére, N. M., Senécal, C. & Valliéres, E. F. (1992): The academic motivation scale: a measure of intrinsic, extrinsic and amotivation in education. *Educational and Psychological Measurement,* **52.** 1003-1017.

Webster, J. D. (2011): A new measure of time perspective: initial psychometric findings for the balanced time perspective scale (BTPS). *Canadian Journal of Behavioural Science,* **43.** 2. 111-118. doi: 10.1037/a0022801

Weiss, M. R. (1993): Psychological effects of intensive sport participation on children and youth: Selfesteem and motivation. In *Intensive participation in children's sports*. Human Kinetics.

Whiteside, S. P. & Lynam, D. R. (2001): The Five Factor Model and impulsivity: using a structural model of personality to understand impulsivity. *Personality and Individual Differences,* **30.** 4. 669-689.

Wryobeck, J. M. & Whitley Jr, B. E. (1999): Educational value orientation and peer perceptions of cheaters. *Ethics & Behavior*, **9.** 3. 231-242.

Zimbardo, P. G. & Boyd, J. N. (1999): Putting time in perspective: a valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, **77.** 6. 1271–1288. doi: 10.1007/978-3-319-07368-2_2

Zimbardo, P. G. & Boyd, J. N. (2008): *The time paradox: The new psychology of time.* Rider Books, London.

Publications and conference presentations related to the topic of the dissertation

Dombi E. & Kovács Á. G. (2017): Machs in Time and Space: Time orientation of machs with respect to work addiction. *Ph Publico: Impulse aus Wissenschaft, Forschung und pädagogischer Praxis*: **12.** 125-132. ISBN:978-385253-569-2.

Dombi E. & Orosz G. (2016): *Measuring Future Time Perspective: Developing a new scale*. In: Anna Sircova, Svenja Konowalczyk (ed.) 3rd International Conference on Time Perspective.

Dombi E. & Kovács Á. G. (2016): Időparadoxon: Hasznosítsd újra a tegnapot, élvezd a mát és légy úrrá a holnapon. [Time Paradox: Recycle the yesterday, enjoy the day today and take control of tomorrow.] *Iskolakultúra,* **26.** 12. 96-98.

Dombi, E. (2016): Az időperspektíva elméletének kutatási eredményei és gyakorlati alkalmazhatósága. [Research results and practical application of the theory of time perspective.] In: Vargha, A. ed. (2016): A Magyar Pszichológiai Társaság XXV. Országos Tudományos Nagygyűlése. [25th Annual Congress of the Hungarian Psychological Association] Budapest: Contact. ISBN 978-615-80241-2-9.

Dombi, E. (2015). *Focusing on students' motivation in the Hungarian educational context*. 17th International Academic Conference. International Institute of Social and Economic Sciences, Prague Czech Republic.

Dombi, E. (2015). Jelen, múlt, jövő. Az időorientáció szerepe életünkben. [Present, past, future: The role of time perspective in our lives.] In: Vargha, A. szerk. A Magyar Pszichológiai Társaság XXIV. Országos Tudományos Nagygyűlése. [24th Annual Congress of the Hungarian Psychological Association] ISBN 978-615-80241-0-5. Topbalaton.

Dombi, E. (2015). *Academic motivation*. 13th Conference on Eduactional Assessment. Szeged: Gold Press, p. 130. ISBN:978-963-306-314-9.

Dombi, E. (2015). *Zimbardo Időperspektíva Kérdőív (ZTPI) validálásának vizsgálata*. [Validation of the Zimbardo Time Perspective Inventory] Doktoranduszok Országos

Szövetségének Tavaszi Szél Konferenciája. [Annual Conference of the Association of Hungarian PhD and DLA Candidates] Eger: Publio Kiadó. ISBN: 978-963-397-702-6.

Dombi, E. (2014): *Az időperspektíva és a testi-lelki egészség összefüggései*. [The relationship between time perspective and physical and mental health.] Magyar Tudomány Ünnepe esemény. [Conference on celebrating the day of Hungarian Science.] MTA SZAB Állampolgári Kompetenciák Munkabizottság előadóülése, Szeged. [Hungarian Academy of Sciences, Szeged.]

Dombi, E. (2014): *Az időorientáció vizsgálatának pszichológiai és neveléstudományi vonatkozásai*. [The psychological and pedagogical aspects of time perspectives.] XIV. Országos Neveléstudományi Konferencia. [14th National Conference on Education, Debrecen.] Debreceni Egyetem Neveléstudományok Intézete. ISBN: 978-963-473-742-1.

Dombi, E. (2014): *Time Perspective and Academic Cheating*. 22nd International Congress of the International Association for Cross-Cultural Psychology (IACCP). Université de Reims, Champagne-Ardenne.

Dombi, E. & Orosz, G. (2014). *Time perspectives behind self-reported academic cheating behavior among Hungarian secondary school students*. IACEP Conference, University of Presov. ISBN: 978-80-555-1075-0.

Dombi, E. & Orosz, G. (2014): *Időorientáció és egészséghez való hozzáállás vizsgálata*. [Examining time orientation and health behaviour.] In: Vargha, A. ed. (2014): XXIII. MPT Országos Tudományos Nagygyűlése Kivonatkötet. [23rd Annual Congress of the Hungarian Psychological Association] Marosvásárhely: Oracler Advertising. ISBN 978-963-87915-9-7.

Dombi, E. és Orosz, G. (2014): *Time perspectives behind student cheating*. In: Korom, E. & Pásztor, A. ed. 12th Conference on Eduactional Assessment. Szeged: Gold Press. ISBN: 978-963-306-279-1.

Dombi, E. (2014): *Testkép és időperspektíva kapcsolata*. [Relationship between body image and time perspective.] In: Csiszár, I. & Kőmíves, P.M. ed. Tavaszi Szél Tanulmánykötet, **4.** 283-292. (ISBN: 978-963-89560-8-8).

Orosz, G., Dombi, E., Tóth-Király, I., Bőthe, B., Jagodics, B. & Zimbardo, P. G. (2016): Academic cheating and time perspective: Cheaters live in the present instead of the future. *Learning and Individual Differences,* **52.** *39-45.*

Orosz, G., Dombi, E., Tóth-Király, I., Roland-Lévy, C. (2015): The Less is More: The 17-Item Zimbardo Time Perspective Inventory. *Current Psychology*, DOI:10.1007/s12144-015-9382-2.

Tóth-Király, I., Orosz, G., Dombi, E., Jagodics, B., Farkas, D. & Amoura, C. (2017): Cross-cultural comparative examination of the Academic Motivation Scale using exploratory structural equation modeling. *Personality and Individual Differences,* **106.** 130-135.