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THESES OF THE DOCTORAL DISSERTATION

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The role of coping in prison adaptation

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Introduction

Imprisonment is a life event that can cause great psychological distress (Edwards & Potter, 2004; Reitzel & Harju, 2000), either the individual enters the prison due to serve the time of his sentence, or is arrested due to the provision of a penal procedure (Btk., Be.). Adjustment to the prison environment is called prison adaptation (Toch et al., 1989). Prison adaptation is regarded as successful when behaviour of offenders entirely fulfill the requirements of institution rules, and when their psychological functioning appears stable. Adaptation is helped or hampered by psychological, demographic and criminological characteristics, and also deprivations experienced inside the prison (Boros & Csetneky, 2002).

We used the coping theory of Lazarus in the process of distress in prison. According to the theory, emotional reaction and coping behaviour is a result of a cognitive appraisal. Coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p141.).

Aims and hypotheses

The aim of my paper was to examine the psychological processes during the imprisonment in a Hungarian offender population, which helped them to adapt and to regulate their emotions. My main aim was to identify the personal psychological resources, thus social aspects of imprisonment weren't stressed in my studies. I wanted to confirm the results of positive psychology in offender population, and to complete the field of prison adaptation with the study of personal resources.

I set myself the aim to investigate expansively the three fields of prison adaptation. The first was prison inmates' coping with stress, and the related topic of sense of control. After imprisonment, prison inmates must build the ability to handle psychological pressure, this process is helped by their coping strategies (Lazarus & Folkman, 1984). A sense of personal control can help the inmates to avoid despair and helplessness in the highly structured system of a prison (Pugh, 1993).

The second field was solving the guilt problem, which meant the affect of offence-related emotions and cognitions on behaviour. I took Tangney's (1990) self-conscious affect theory as a basis in studying offence-related shame and guilt. The theory stresses that the emotion of shame is connected to a negative self-concept and to denial of responsibility, while the emotion of guilt facilitates taking the responsibility and motivates to restore the damages.

The third field studied imprisonment as an existential border situation, supposing that prison inmates' cognitions contained thoughts about meaning of life and ultimate concerns about their existence, which made them think over their former way of life (Yalom, 2006; Frankl, 1997).

Beside the quantitative methodology I used open-ended questions and content analysis in two cases. I made two longitudinal studies, in order to measure more accurately the time factors of prison adaptation. Subjects were adult male prisoners in all of my studies.

Inmates' coping with stress and perceived control in prison

I have been using the Coping Strategy Preference Inventory (CSPI; Oláh, 2005) when working with prisoners, and I checked its statistical reliability (1) and correlation with questionnaires of similar contents (2). Coping in prison – as well in society – was regarded as an adaptive process that facilitated adjustment and maintaining psychological stability. A study by Zamble and Porporino (1988) reported that prisoners' most often used coping strategy was reactive problem-oriented behaviour, namely dealing immediately with a problem in the hope of a solution, but without being organized or planned. I expected a similar tendency in a pattern of Hungarian prison inmates (3), namely preference of active, behavioural coping strategies that aim solving problems immediately, and stronger presence of maladaptive coping strategies that aim escaping or avoiding.

Zamble and Porporino (1988) stated that first-time prisoners' coping strategies proved to be more efficient (in prison and in society as well) than recidivists'. Recidivists released from prison with a coping pattern that was stabilized inside the prison, and it hampered their successful adaptation in society. I expected difference in coping of first-time and recidivist prisoners (4): a rather maladaptive coping pattern of recidivist inmates (cf. Griffith et al, 1981). I expected difference in coping of violent and non-violent offenders (5): weaker anger control of violent offenders.

Inmate behaviour is controlled by numerous external factors, for example prison rules, order of the day which is independent of personal decisions or needs, and orders of prison stuff. However, prisoners can choose from the available possibilities, they can handle social situations by their personality, they can shape their environment as they need. I presupposed that adaptation to prison environment – even positively or negatively – was affected by a sense of control specific for prison (6). I hypothesized a relationship between internal locus of control and positive conduct, and external locus of control and negative conduct (Pugh, 1994; Groh & Goldenberg, 1976). I assumed that prison locus of control was more significant in adaptation than general locus of control, namely the statistical model would show the effect of prison locus of control instead of general locus of control.

I presupposed lower psychological discomfort, namely fewer subjective physical symptom in prisoners with internal locus of control (7) (MacKenzie et al, 1987). Here again, I expected prison locus of control to have greater impact than general locus of control.

I hypothesised the increase of external locus of control with time spent in prison (8), and a higher external locus of control in recidivists than in first-time prisoners (9) (Griffith et al, 1981).

I expected that higher external locus of control was in relation with higher general discomfort in both data collection, and that initial external locus of control was correlated with physical symptoms after 4 months (*10*) (MacKenzie et al, 1987; Pugh, 1993). I studied the impact of initial coping pattern on adaptation after 4 months (*11*) (Negy et al, 1997; Ireland et al, 2005; Van Harreveld et al, 2007). I expected lower physical symptoms and appropriate adaptation in connection with problem-oriented coping strategies and internal locus of control. I supposed that emotion-oriented coping strategies and external locus of control resulted more distress symptoms and weak adaptation in the first 4 months.

Solving the guilt problem

Prisoners on remand spend great part of their time with thinking about their crime's details, evidences pro and contra, opportunities and sentence chances. They must deal with the question of being guilty or innocence, which reflects on their trial, and even their self-concept and psychological characteristics. They can have 3 types of attitudes toward their guilt (innocence): they can confess their guilt, deny their guilt and neutralize it by self-justification techniques (Boros & Csetneky, 2002). Neutralization techniques dispose the offender to acquit about the crime although remaining guilty in the sense of law. This way their self-concept doesn't get hurt, and their psychological stability is acknowledged by inmate society. According to Cechaviciute and Kenny (2007), the core of neutralization is the conflict between the offender's self-concept and his behaviour. In case of successful decrease of the weight of the crime or his own responsibility, the conflict decreases too, and he doesn't need to modify his self-concept in order to maintain the balance.

Wright and Gudjonsson (2007) wanted to answer the question, whether offenders feel guilt or shame about their crimes. They used crime-specific questionnaire and evidenced that moral emotions appear even in offenders, which could have a great role in confessing (taking the responsibility) and in psychological treatment.

In a sample of Hungarian prisoners, I expected the relationship between offence-related guilt and general sense of guilt, and between offence-related shame and general emotion of shame (*12*) (Wright & Gudjonsson, 2007). I assumed a negative link between shame (general and offence-related) and self-esteem, and positive link between shame and dysfunctional attitudes that have a role in development of depression. I expected a negative link between offence-related guilt and dysfunctional attitudes (*13*) (Tangney et al, 2011).

First-time offenders were expected to have stronger guilt problem because of the dissonance between prosocial values and offending, so in first-time offenders I expected the above mentioned links being stronger (*14*) (Cechaviciute & Kenny, 2007). After solving the guilt problem (after spending some time in prison) I expected decline in offence-related shame and guilt (*15*) (Boros & Csetneky, 2002).

I hypothesised the relationship between offence-related guilt and shame and moral attitudes (*16*), because of the impact of moral sensitivity on the own crime.

Offence-related emotions' affect on prison adaptation have not been studied yet (cf. Kovács et al, 2019a). I assumed that offence-related shame was in a positive connection with physical symptoms (that show discomfort) (*17*) (Tangney et al, 2011). I assumed offence-related guilt's positive link to problem-oriented coping (for example problem-focused reaction, strain control) and offence-related shame's positive link to maladaptive coping strategies (for example self-blame, venting on emotions and distraction) (*18*) (cf. Wright & Gudjonsson, 2007).

I studied psychological efforts of adaptation in the first 4 months in prison by a longitudinal study. I hypothesised that maladaptive coping (mainly self-blame) and offence-related shame resulted in misconduct, and that problem-focused coping, seeking social support and acceptance resulted in an appropriate adaptation (*19*) (Dhami et al, 2007; Mohino, Kirchner & Forns, 2004).

Imprisonment as an existential border situation

I accepted the preconception that imprisonment represented a negative life event and an existential border situation, thus it was reasonable that prisoners became sensitive to thoughts about viewing their life in a broader aspect and concluded reflections about their life (Frankl, 1997). I wanted to evince that imprisonment as an existential border situation emerged in the content analysis of narratives about early prison experiences (*20*) (Yalom, 2006).

I hypothesised that prison inmates who spent less than 6 months in prison were closer to the distress caused by imprisonment, so they mentioned negative events in relation with prison more often, and they referred existential contents more often. Prisoners who spent more than 6 months in prison were assumed to get over the initial convulsion, and they rather dealt with everyday life of prison and their status in it (*21*) (Boros & Csetneky, 2002).

Method

In the dissertation I presented the results of six empirical studies. Data collection was put through in Veszprém County Correctional Institution in five of the studies, and in three different Hungarian prisons in one study. The time of data collection was between 2010. and 2013. Demographic and criminal history data were collected in every studies, the psychological measures are presented hereinafter.

Study 1 I analysed 262 adult male inmates' (mean age=33.7 years, SD=10.30) initial psychological tests. Besides Coping Strategy Preference Inventory (Oláh, 2005), I used a 20-item Symptom List, Offence-Related Shame and Guilt Scale (Wright & Gudjonsson, 2007), and Anger Expression Scale (Oláh, 2005). Coping was measured on 8 sub-scales: problem-focused reaction, seeking social support, strain

control, distraction, emotion-focused, venting on emotions, self-blame, and acceptance. Study 1 tested the above presented 1-5. hypotheses.

413 adult male prison inmates took part in Study 2 from Veszprém County Correctional Institution (n=121), Maximum and Medium Security Correctional Institution Vác (n=136), and National Correctional Institution Állampuszta (n=156) (mean age=35.6 years, SD=10,7). Inmates filled out Adult Novicki-Strickland Internal-External Control Scale (Robinson, Shaver & Wrightsman, 1991), Prison Locus of Control Scale (Pugh, 1994), Positive and Negative Adjustment Rating Scale and stress-related Physical Symptoms Scale (Szondy, Dienes & Kovács, 2005). Hypotheses 6-7. belonged to Study 2.

Study 3 had a longitudinal design. 74 adult male prisoners (mean age=33 years, SD=9,2) took part in both data collection: at intake and after 4 months. At time 1 (T1), subjects filled out Coping Strategy Preference Inventory, Prison Locus of Control Scale, and the 20-item Symptom List. At time 2 (T2) they answered my own questions about perceived control in prison, Spheres of Control Scale (Paulhus, 1983), Prison Locus of Control Scale, the 20-item Symptom List and the Positive and Negative Adjustment Rating Scale. Study 3 tested hypotheses 8-11.

In Study 4, 76 adult male prisoners took part from Veszprém County Correctional Institution, they were either on remand or convicted. The study was part of a greater research on ELTE-PPK investigating the relationship of moral attitudes and disgust in separate populations. Prison inmates filled out Test of Self-conscious Affect (TOSCA-3, Tangney et al, 2011), Offence-Related Shame and Guilt Scale, Dysfunctional Attitude Scale (DAS, Beevers et al, 2007), Rosenberg Self-esteem Scale (SES, Rosenberg, 1965), and Moral Foundations Sacredness Scale (MFSS, Graham, Haidt & Nosek, 2009). Hypotheses 12-16. were checked in Study 4.

Study 5 was a longitudinal study, it analysed prisoners' adjustment in Veszprém County Correctional Institution who arrived in prison in the year of 2011 and 2012. 567 male adult prison inmates served their remand or convict time in prison, took part in the initial psychological measure. After 4 months 316 of them (55.7%) were still in the same prison. Prisoners after imprisonment (T1) filled out Offence-Related Shame and Guilt Scale, Coping Strategy Preference Inventory, and the 20-item Symptom List. The follow-up data collection (T2) took place 4 months later. These data derived from official records. Data included number of disciplinary proceedings, number of rewards received, number of contact individuals, and number of visitations. Hypotheses 17-19. belonged to Study 5.

Study 6 was a qualitative, cross-sectional research. Participants gave open-ended reports about how they remembered arriving in prison, what feelings and thoughts were present then. 100 questionnaires were handed out in Veszprém County Correctional Institution, 68 inmates took part in the study, 54 answered the open-ended question (mean age=33.5 years). Study 6 tested hypotheses 20-21.

Results

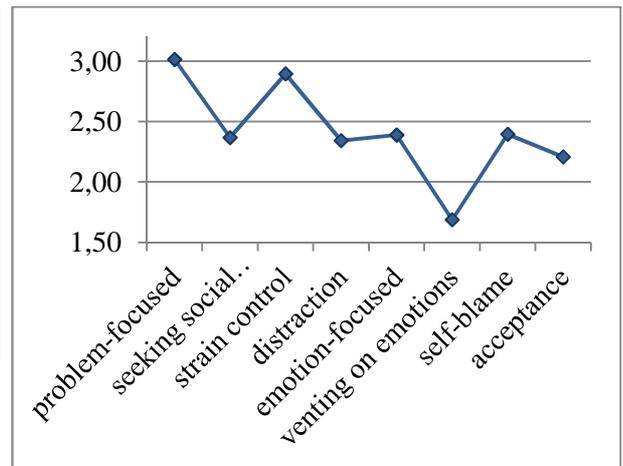
I present results in the order of the hypotheses above.

(1) Reliability of Coping Strategy Preference Inventory

The reliability of Coping Strategy Preference Inventory was appropriate, although three subscales slightly lag behind the 0.7 Cronbach-alpha level (table 1. and figure 1.).

Table 1. and figure 1. CSPI sub-scales means, standard deviations and reliabilities.

Coping Strategy Preference Inventory	Mean	SD	Cronbach- α
Problem-focused reaction	3.01	.618	.824
Seeking social support	2.36	.647	.834
Strain control	2.89	.544	.726
Distraction	2.34	.547	.789
Emotion-focused	2.38	.485	.685
Venting on emotions	1.68	.462	.684
Self-blame	2.39	.635	.689
Acceptance	2.20	.768	.771



(2) Relationship between Coping Strategy Preference Inventory sub-scales and questionnaires of similar contents

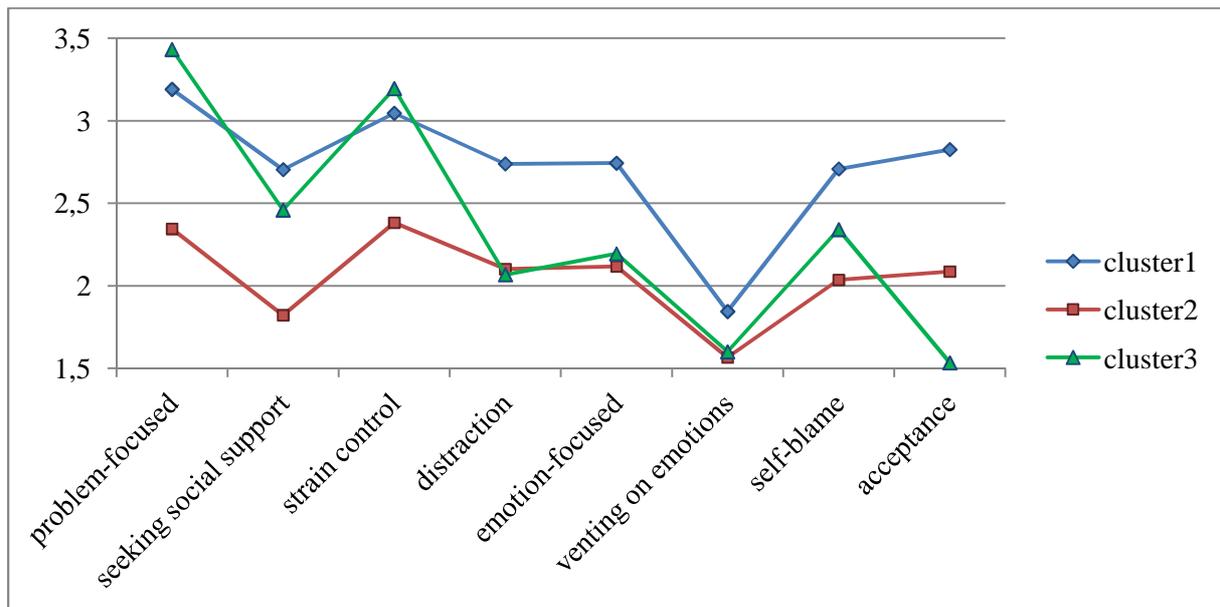
Venting on emotions correlated with the anger-out sub-scale ($r=.602$, $p<.001$) and anger-expression sub-scale ($r=.368$, $p=.008$) of Anger Expression Scale. Self-blame correlated positively with offence-related guilt ($r=.362$, $p<.001$) and shame ($r=.409$, $p<.001$).

(3) Inmates' coping preferences

Problem-focused reaction and strain control sub-scales of Coping Strategy Preference Inventory showed the highest scores, that is these coping strategies were most often used by prison inmates in stress situations. Preference of problem-focused reaction was congruent with former results in this field (Zamble & Porporino, 1990), namely prisoners sought immediate and active solutions in stress situations, their aim was to cut out the source of strain, even if they didn't have enough information about the situation, they didn't plan their actions (Boros & Csetneky, 2002).

3 clusters were identified via K-means cluster analysis (figure 2). One-way ANOVA resulted significant difference between the groups in all of the coping strategies except for seeking social support and self-blame.

Figure 2. Coping Strategy Preference Inventory's 3 clusters



Cluster 1 was named *Avoidant copers*, because they showed higher scores in every emotional coping strategies and in seeking social support. Even problem-orientation was high, so they were open to any solution in a problem situation in order to make an end of that situation. They were characterized by high acceptance, so they were assumed not to tolerate frustration in a longer period. If their first attempts were not successful, they gave up coping.

Cluster 2 formed the group of *Immature copers*, who were significantly the youngest ones and the least educated. The basic difference between them and the other two groups was that their problem-oriented coping was lower. While coping they seemed to use accidental, trial and error solutions, they sustained a lot of failure that hindered them to keep persistence.

Cluster 3 formed the group of *Solution-oriented copers*, because they dominantly used problem-centered strategies and acceptance was the lowest, so their aim was to solve the situation completely, they didn't like compromises and giving up trying.

(4) *Difference between first-time offenders and recidivists in coping*

Recidivists were disposed to both venting on emotions ($t=-2.261, p=.025$) and acceptance ($t=-2.390, p=.018$). The more time somebody spent in prison in his life, the less he sought social support ($r=-.162, p=.013$) and the stronger was venting on emotion ($r=.163, p=.013$).

An interesting result emerged from studying family criminal history: prison inmates who didn't have any criminal family members, reached higher score on self-blame ($t=1.939, p=.054$), offence-related guilt ($t=.399, p=.018$) and shame ($t=2.210, p=.029$).

We can say that not first-time offenders' coping is „better”, but recidivists show deficit.

(5) Difference between violent and non-violent offenders in coping

Violent offenders reached lower scores on problem-focus ($t=1.994$, $p=.047$). This result was not predicted by the hypothesis, because we didn't see the deficit in anger-control in violent offenders, still they showed a deficit in rational stress management, which was congruent with the hypothesis.

(6) Impact of general and prison-specific control on positive and negative adaptation

Stepwise linear regression analysis was used to investigate the influence of demographic, criminal and control variables on factors of adaptation. Dependent variables were the adaptation factors (in four different analyses), independent variables' first block contained demographic and criminal history variables, second block contained prison-specific external control.

4 variables predicted the factor of sport and cultural activities: type of detention, education, age and prison external control (table 2.). The amount of variance explained was 15.3%. Remand, younger age, higher education and internal control predicted taking part in sports and cultural activities.

Table 2. Linear regression analysis. Dependent variable: sports and culture (n=390)

	β	t	p
Type of detention	-.220	-4.555	.000
Education	.157	3.091	.002
Age	-.126	-2.584	.010
Prison-specific external control	-.219	-4.587	.000

In the model that explained 29.4% variance of rule violations, 4 significant predictors took part (table 3.). Time actually and total spent in prison favoured ignoring rules. Younger age and external control were also in favour of misconduct.

Table 3. Linear regression analysis. Dependent variable: rule violations (n=388)

	β	t	p
Time actually spent in prison	.326	7.318	.000
Age	-.256	-5.644	.000
Time total spent in prison	.176	3.732	.000
Prison-specific external control	.241	2.529	.000

Maladaptive strain-reduction (drug use in cells, suicide ideations, suicide attempt, tranquillizer prescription) was predicted by time actually and total spent in prison, education and control. The amount of variance explained was 17.9% (table 4.). Time spent in prison increased the likelihood of these strain-reduction behaviours, while education and internal control appeared to be protective factors.

Table 4. Linear regression analysis. Dependent variable: maladaptive strain reduction (n=388)

	β	t	p
Time actually spent in prison	.174	3.688	.000
Education	-.175	-3.760	.000
Time total spent in prison	.126	2.632	.009
Prison external control	.275	5.861	.000

(7) Relationship between prison locus of control and subjective physical symptoms

Total amount of variance explained was 17.1% in the regression analysis. Education, total time spent in prison and prison external control were predictors of health complaints (table 5.). The higher was the education the lower were the symptoms, while total time spent in prison and external control increased the number of symptoms.

Table 5. Linear regression analysis. Dependent variable: sum of physical symptoms (n=390)

	β	t	p
Education	-.175	-3.718	.000
Time total spent in prison	.111	2.365	.019
Prison-specific external control	.311	6.557	.000

(8) The effect of time spent in prison on prison locus of control

Prison external control raised 2 points between T1 and T2, the difference was significant ($t=-4.528$, $p<.001$).

(9) Difference between first-time offenders and recidivists in prison locus of control

First-time offenders and recidivists didn't differ in control and coping. External prison-specific control wasn't more salient in recidivists, moreover, the three general locus of control subscales didn't show difference between first-timers and recidivists.

(10) Impact of external locus of control on physical symptoms

T1 external control correlated positively with T1 physical symptoms ($r=.278$, $p=.018$), and T2 external control correlated positively with T2 symptoms ($r=.240$, $p=.058$). T1 external control correlated only marginally with T2 physical symptoms, and T1 symptoms didn't correlate with T2 external control. Symptoms didn't relate to any other control variables.

(11) Initial coping and control's impact on conduct and physical symptoms after 4 months

I used stepwise linear regression analysis to reveal factors that predict T2 symptoms and adjustment. In the first regression, dependent variable was T2 symptom score, independent variables consisted of demographic, coping, control

and adjustment variables. 4 factors predicted health problems: T1 self-blame coping, T1 acceptance coping, T2 prison external control, and active attempts for keeping control (table 6.). Total amount of variance explained was 44.4%. Initial self-blame and external control strengthened distress symptoms after 4 months, while initial acceptance and active attempts for keeping control caused lower symptom score after 4 months.

Table 6. Linear regression analysis. Dependent variable: T2 symptom score (n=74)

	β	t	p
T1 self-blame	.463	4.400	.000
T2 prison-specific external control	.411	3.646	.001
T1 acceptance	-.322	-2.818	.007
Number of active attempts	-.240	-2.192	.033

Stepwise linear regression analysis was carried out in predicting T2 positive adaptation. Independent variables were entered in two blocks: demographic, and coping, control and symptom variables. Number of active control attempts, seeking social support and socio-political control predicted positive adjustment. The model contained the number of contact persons as well, but it lost its significance after entering the further variables. The model of these four variables explained 47.3% of total variance (table 7.).

Preference of positive conduct increased with active effort to keep control, seeking social support and more contact persons. Adaptation without troubles implied a stable social background. Higher socio-political control was in a negative relationship with positive conduct, this result was hard interpretable, moreover, socio-politic control sub-scale of the Paulhus Inventory had weak reliability.

Table 7. Linear regression analysis. Dependent variable: T2 positive adaptation (n=74)

	β	t	p
Number of contact persons	.184	1.606	.114
Number of active attempts	.408	3.653	.001
Seeking social support	.351	3.438	.001
Socio-political control	-.222	-2.131	.038

Although Scale of Negative Adaptation's reliability was very low (Cronbach-alpha=.344), this factor was also investigated by a linear regression analysis. Disciplinary proceedings were controlled at the first step, the other variables were stepwisely in the analysis. The model explained 37% of the total variance. 3 variables were significant: drug use before prison, perceived effectiveness of control attempts, and venting on emotions coping strategy (table 8.). Drug consumption and venting on emotion predicted higher level of conduct problems. Perceived effectiveness in the field of control lowered adaptation problems.

Table 8. Linear regression analysis, dependent variable: T2 negative adaptation (n=74)

	β	t	p
Disciplinary proceedings	.258	2.211	.032
Drug use before prison	.346	3.082	.003
Perceived effectiveness	-.310	-2.741	.008

Venting on emotions	.250	2.204	.032
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(12) Relationship between offence-related shame and guilt and general shame and guilt

Offence-related guilt correlated positively with general guilt ($r=.311$, $p=.006$), offence-related shame correlated positively with general shame ($r=.386$, $p=.001$). After controlling offence-related shame, guilt didn't correlate with general guilt ($r=.164$, $p=.159$). After controlling offence-related guilt, shame correlated with general shame proneness ($r=.343$, $p=.003$).

(13) The relationship between offence-related shame and guilt, and dysfunctional attitudes and self-esteem

Offence-related guilt and shame weren't in connection neither with dysfunctional attitudes ($r_{\text{guilt partial}}=.183$, $p=.116$, $r_{\text{shame partial}}=.107$, $p=.360$) nor with self-esteem ($r_{\text{guilt partial}}=-.77$, $p=.510$, $r_{\text{shame partial}}=.116$, $p=.324$). General guilt correlated positively with dysfunctional attitudes after controlling for the variance of shame ($r=.288$, $p=.012$), but not with self-esteem ($r=-.037$, $p=.751$). Partial correlations of general shame weren't significant with dysfunctional attitudes and self-esteem ($r=.045$, $p=.704$ and $r=-.093$, $p=.428$).

However, self-esteem showed nonlinear (quadratic) connection with general guilt-proneness and general shame-proneness: low and high scores on guilt ($F=3,924$, $p=.024$, $R^2=.097$) and shame ($F=5,063$, $p=.009$, $R^2=.122$) led to high self-esteem, medium scores inferred low self-esteem. Low guilt and shame led to decrease in self-esteem, after a turning point this impact didn't get on, moreover it turned to its contrary.

(14) Difference between first-time offenders and recidivists in offence-related emotions

First-time offenders ($n=40$) didn't differ from recidivists ($n=36$) – using independent sample t-tests – in offence-related guilt ($t=-.621$, $p=.536$) and shame ($t=-.519$, $p=.605$), general guilt ($t=1.234$, $p=.221$) and shame ($t=.862$, $p=.391$), self-esteem ($t=-.759$, $p=.450$) and dysfunctional attitudes ($t=.927$, $p=.357$).

Regarding only first-time offenders, offence-related guilt and general guilt also correlated positively with dysfunctional attitudes (partial correlations, $r=.368$, $p=.021$ and $r=.335$, $p=.037$). Contrarily, in recidivists, offence-related shame correlated positively with dysfunctional attitudes (partial correlation, $r=.374$, $p=.029$).

First-time offenders showed increase in self-esteem along with the time spent in prison ($r=.304$, $p=.056$), and decrease in general shame with time (partial correlation, $r=-.386$, $p=.021$). In recidivists, actual time spent in prison had a relationship with decrease of general guilt (partial correlation, $r=-.346$, $p=.042$). Total time spent in prison showed also a tendency of decrease in general guilt (partial correlation, $r=.349$, $p=.040$).

(15) Decrease of offence-related emotions along with time spent in prison

Time actually spent in prison didn't correlate with offence-related affects ($r_{\text{guilt partial}} = -.039, p = .742, r_{\text{shame partial}} = -.107, p = .362$). Further analysis of the role of time was carried out by t-tests using Brown and Ireland's (2006) method to form cross-sectional data into quasi-longitudinal. Variables showed difference after 20 months: after being in prison 1 year 8 months long, offence-related shame became significantly lower ($t = 2.550, p = .014$), after 2 years in prison offence-related guilt became also lower ($t = 2.555, p = .019$). We could observe increase in self-esteem after 1 and a half year ($t = 2.048, p = .038$).

(16) Relationship between offence-related shame and guilt and moral attitudes

Partial correlations were non-significant between offence-related shame and guilt, general shame and guilt and moral attitudes.

(17) Relationship between offence-related shame and physical symptoms

Symptoms correlated positively with shame, and didn't correlate with guilt (table 9).

(18) Relationship between offence-related shame and guilt and coping strategies

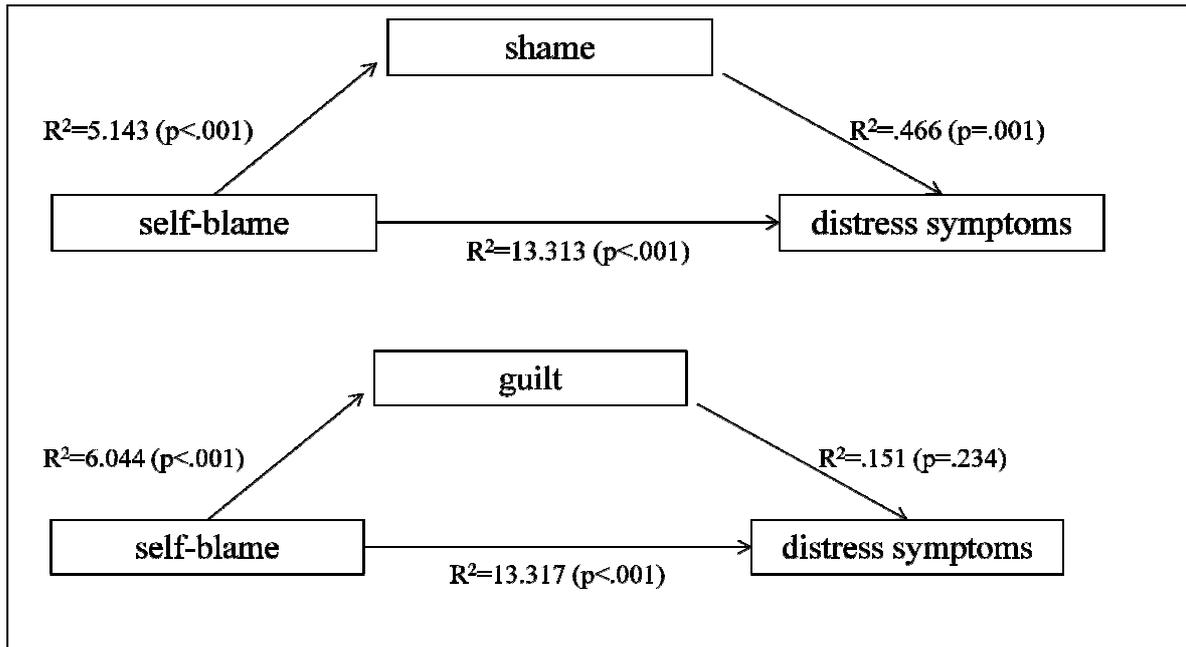
Guilt and shame were connected in several ways to coping strategies (table 9). Offence-related guilt had the strongest correlation with self-blame and anger control, shame correlated with self-blame and distraction. We could see the shared variance's influence in emotion-focus and seeking social support. Shame related positively to distraction, acceptance and distress symptoms. Self-blame was in a positive linear connection with both of the moral emotions. Venting on emotions showed contrary tendency after parcelling out the shared variance: coping by free venting of emotions related positively to shame and negatively to guilt.

Table 9. Offence-related shame and guilt's total and partial correlations with coping strategies

Coping Strategy Preference Inventory	Offence-Related Shame and Guilt Scale			
	Guilt		Shame	
	Pearson correlation	partial (shame-free)	Pearson correlation	partial (guilt-free)
Problem-focused reaction	.085 (.200)	.090 (.176)	.049 (.457)	-.020 (.770)
Seeking social support	.109 (.099)	.014 (.835)	.143 (.029)	.093 (.162)
Strain control	-.049 (.459)	-.073 (.271)	.011 (.862)	.065 (.331)
Distraction	.135 (.041)	-.004 (.953)	.207 (.002)	.152 (.022)
Emotion-focus	.113 (.085)	.024 (.718)	.142 (.031)	.084 (.207)
Venting on emotions	-.128 (.053)	-.173 (.009)	-.004 (.946)	.115 (.084)
Self-blame	.383 (<.001)	.176 (.008)	.387 (<.001)	.176 (.008)
Acceptance	.079 (.230)	-.036 (.589)	.154 (.019)	.131 (.049)
Physical symptoms	.230 (<.001)	-.012 (.860)	.323 (<.001)	.250 (<.001)

Mediation analysis was used (after Baron and Kenny, 1986)¹ with regression method in order to investigate whether the relationship of maladaptive coping and bad mood was mediated by moral emotions (figure 3.). Results confirmed partial mediation effect. Self-blame showed strong positive correlation with symptom-proneness ($r=.408$, $p<.001$), while acceptance didn't correlate with it. 17,99% of the relationship between self-blame and bad mood was mediated by offence-related shame (Sobel=4.301, $p<.001$), 6,88% by offence-related guilt (Sobel=2.768, $p=.005$). Symptoms were mediated strongerly by shame, while guilt's effect was weaker.

Figure 3. Result of mediation analyses



(19) Impact of initial coping strategies and offence-related emotions on prison adaptation after 4 months

Stepwise regression analysis was used in studying the four adaptation variables. Only 7.5% of the variance was explained by the model, in which disciplinary tickets were predicted by age at first conviction ($\beta=-.194$, $t=-2.708$, $p=.007$), and presence of a formerly imprisoned family member ($\beta=.142$, $t=1.975$, $p=.050$). The younger was the inmate at his first imprisonment, or he had a criminal family member, the more likely he got one or more disciplinary tickets.

11% of the variance was explained in the regression analysis of rewards. 2 variables had predictive power: type of detention ($\beta=.286$, $t=4.279$, $p<.001$) and education ($\beta=.185$, $t=2.768$, $p=.006$). Being a convict and higher education facilitated rewards in the first times.

Number of contact persons in the 4th month was predicted by type of detention, number of children, and having a formerly incarcerated family member (table 10.).

¹ Mediation is present if independent variable correlates with dependent variable, mediator variable correlates with independent and dependent variables, and after entering mediator variable, correlation between independent and dependent variable decreases or lost statistical significance.

Being a convict, having more children and having a formerly imprisoned family member helped building connections more successfully. The model explained 25.1% of variance. It was easier to register family members and friends as contacts, if the person was a sentenced offender, this was seen in the results. Number of children pointed out stronger social network. I think formerly imprisoned family member explained contacts via family's former experience in handling an incarcerated family member, they reacted more routinely to the administration tasks.

Table 10. Linear regression analysis. Dependent variable: number of contact persons

	β	t	p
Type of detention	.307	4.658	.000
Number of children	.175	2.685	.008
Formerly incarcerated family member	.158	2.438	.016

In the case of prisoners who were at least once visited in the first 4 months (n=215), visitation was explained by type of detention and feeling of innocence. The model explained 11.9% of total variance (table 11.). Convicts and inmates who felt innocent had more visitors. Convicts built their contacts quicker, thus they could be visited sooner and by more contact persons. Innocence gave possibility only to speculation: maybe stressing innocence produced stronger regret and empathy in family members.

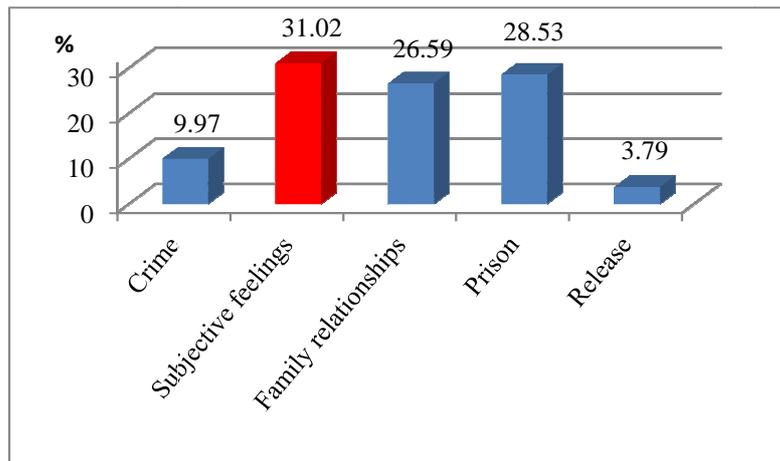
Table 11. Linear regression analysis. Dependent variable: number of visitors

	β	t	p
Type of detention	.305	2.942	.004
Innocence	.252	2.427	.017

(20) Imprisonment as an existential border situation in narratives about initial time

Subjective feelings totaled up to 31.02% of all answers (figure 4). This category contained contents about personality change, lessons of the past, great questions in life, and experiencing border situations. In sum, these answers carried the themes of existential concerns. Prison inmates thought least of release and their crime, while family relationships and prison environment occupied their attention in a greater extent.

Figure 4. Content-groups mention rate among all answers



(21) Differences in existential themes in narratives along time spent in prison

Time spent in prison resulted only one significant difference in contents. Inmates who were in prison less than 6 months, mentioned more often that imprisonment made them realize their former mistakes ($\chi^2=4.283$, $p=.038$).

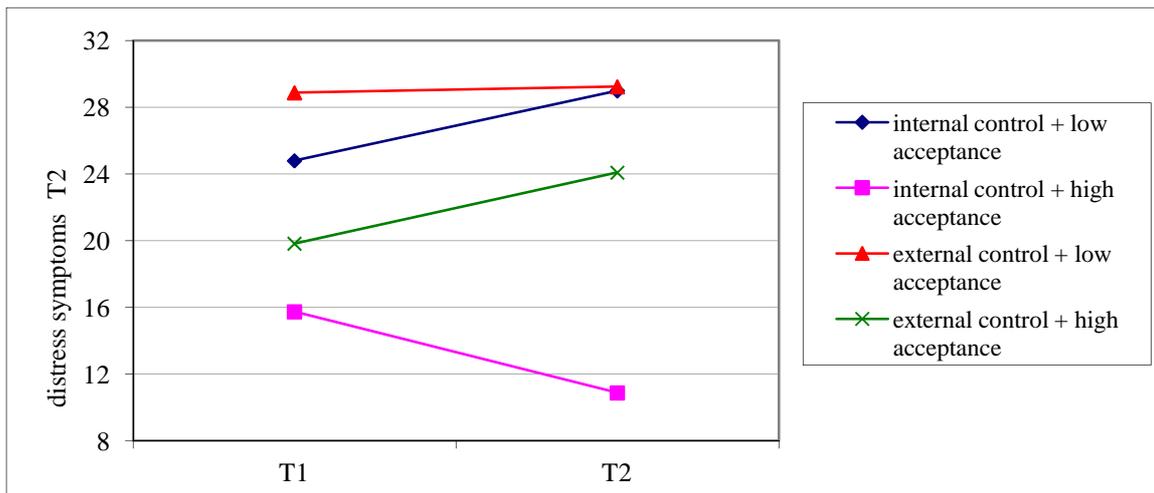
Further results

Although I didn't have hypotheses about them, exciting results emerged about acceptance coping, the category of first-time offender, remand prison and feeling of innocence.

An interesting result emerged in Study 3: although acceptance coping was in a relationship with external control, it predicted better adaptation after 4 months (*II*). Post-hoc analysis of data was carried out with a univariate analysis of variance, in which dependent variable was T2 physical symptoms, independent variables were T2 external control and T1 acceptance coping. The model confirmed the main effect of independent variables (main effect of external control: $F=4.567$, $p=.014$; main effect of acceptance: $F=9.591$, $p=.001$), and interaction also reached the significance level ($F=4.534$, $p=.012$). So we can state that psychological mood in the fourth month of prison depends on prison locus of control and initial acceptance coping. If having internal control, high level of acceptance protected inmates from increase of distress-symptoms.

The model is shown on figure 5. and table 12. Prisoners who easily accepted the situations, reached higher score on symptom list, than prisoners who weren't intent to accept. Internal control high acceptance group was the only that showed decrease in distress-symptomes (extent of increase and decrease didn't reach a significant level). This points to the fact that acceptance sub-scale of Coping Strategy Preference Inventory shows the construct of active acceptance, and measures a proactive, adaptive form of coping (cf. Nakamura & Orth, 2005).

Figure 5. and table 12. T1 and T2 external control and acceptance scores



		Symptoms (T1)	Symptoms (T2)
Internal control (T2)	Low acceptance	24,80	29,00
	High acceptance	15,75	10,88
External control (T2)	Low acceptance	28,88	29,24
	High acceptance	19,83	24,09

According to results of Study 1, prisoners who didn't have a formerly incarcerated family member, tended to have greater self-blame, guilt and shame as well. This wasn't characteristic of first-time offenders. In Study 5, criminal history didn't predict offence-related emotions, whereas prisoners from a clean record family felt greater guilt and shame thinking about their crime. So we can state that "first time" and "recidivist" is not simply the characteristic of an offender but a family can also be a "first-timer". Moreover, only non-criminal families felt the dissonance between crime and prosocial values. It turned out that "first-time" offenders were not ones who were imprisoned at first time, but who were the first having a serious penal process in their socialization environment. The conclusion is that first incarcerated offenders had actually already done their first crime before, and incarceration occurred later, when committing a crime didn't trigger a moral dilemma any more.

Study 1 revealed an interesting finding about feeling of innocence: "innocence" was not simply a marker of crime, but a subjective factor that held psychological content. Guilt and shame appeared only when offenders gave up emphasising their innocence and took the responsibility of their acts. Resisting on innocence operated as a coping strategy, since it correlated with strain control. In Study 5, subjectively innocent prisoners felt less guilt and shame. In regression analysis, guilt was predicted by shame's shared variance, feeling of innocence and maladaptive coping.

A similar finding was observed in Study 4, where shame, guilt and moral attitudes were the lowest among prisoners on remand. It is likely that a sentence said by the court of the first instance caused an ambivalent state, and prisoners fended off prosocial values. Sentence of the court of the first instance was an arbitrament of being guilty, but prisoners had a right to appeal and argue beside their innocence in front of another court. This first sentence ended the uncertainty of being on

remand, since it approximately determined time-length of prison. At the same time it confronted prisoners with their guilt, forcing them to fight for their innocence. Penal process created a paradox situation, so it could be possible that prisoners mental capacity decreased until they were given a final and binding sentence. During this time they strongly fended off moral values and feelings related to crime.

Compared to remanders, convicts had greater offence-related guilt, independently the time actually spent in prison. Offenders effectively felt themselves guilty only when it was undisputedly claimed by court, and they felt it at least when they already had the possibility to appeal. Total time spent in prison was in an inverse relation with general guilt, so we could assume that a lot of recidivism made offenders insensitive of guilt, thus feeling of guilt appeared less and less.

Conclusion

Psychologists working in prisons first of all try to handle prisoners' prison-related problems, work directed to resocialization is scarce, even though law assigns this as a primary task (Szabó, 2012). Measurement of risk factors are important when preparing prisoners for prison, but preparing for free life must have contain mapping personal resources and correcting errors. It would bring a great change in correction facilities' life if their main aim became helping offenders to reentry into the society.

Positive psychology reached great attitude change in healing by emphasising personal resources, and my dissertation's results supported their grounds in work with prisoners as well. Prisoners psychological state is affected not only by vulnerabilities taken from socialization (import model) or deprivations experienced in prison (deprivation model), but even by coping with challenges in prison, keeping their self-esteem, and defending their identity and family relationships despite the increased pressure.

Personal psychological study of prison adaptation, and research of remand prisoners are new elements in Hungarian criminal psychology. Although empirical studies had methodological limitations (small sample size, male samples, tests that need literacy and self-reflection), they could answer important questions, and these researches serve as a starting point for further studies.

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³ During the data collection, a former penal code was in effect: 1978. évi IV. act

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