

Attachment to parents and friends as a context for development of self-concept in adolescence: The personality traits as mediators

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The aim of the research is to study developmental relations between attachment to mother, father and friends and dimensions of adolescents' self-concept. More specifically, we examine if this relation is direct or mediated by some personality construct. A sample of 878 students (13 and 16 years old) from Belgrade urban lower secondary and upper secondary schools participated in this research. Participants completed ECR for mother, father and friend; Self-perception profile for adolescents and NEOFFI. The results have indicated that dimensions of attachment are correlated with dimensions of self-concept, and that they can explain 13% of variance in dimensions of self-concept. When the personality traits are introduced as mediators, attachment dimensions explain only 4.5% of variance in self-concept. The quality of attachment relations with parents is not related to adolescents' self-concept, while attachment to friends is correlated with social dimensions of self-concept. Hence, this study suggests that adolescents with particular parental attachment styles differ according to their self-concept profiles, but that peer attachment is important for adolescents' social self. Beside that, this study reveals significant gender differences: relation between parental and peer attachment and adolescents' self-concepts is not the same for boys and girls.

Keywords: attachment, parents and friends, self-concept, big five personality traits, adolescence

Different theoretical perspectives (social network theory, theory of group socialisation, socio-cultural theory) emphasise that a child does not develop in the dyadic relation just with the mother, but in the broad network of social relations (Arens & Hasselhorn, 2015; Bressoux & Pansu, 2016; Farant & Reese, 2000; Grygiel, Modzelewski, & Pisarek, 2016; Harris, 1998; Lewis, 2005; Newcombe & Reese, 2004; Radišić, Videnović, & Baucal, 2015; Takahashi,

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Acknowledgement. The paper is a part of the project "Identification, measurement and development of cognitive and emotional competences important for a society oriented toward European integrations" (No. 179018) being done by the Institute of Psychology, University of Belgrade, and funded by the Ministry of Science, Republic of Serbia

2005; Thompson, 2005; Weisner, 2005). From this perspective, a number of relations with other people fulfil different child's needs, and the quality of these relations affect different areas of psychological functioning in later life.

At the same time, cross-cultural research shows that a child develops attachment to more than one person, and every relationship is significant for the domain in which it is developed (for example, peers for socialisation, mother for health and physical development, etc.) (Howees, 1999; van Ijzendoorn & Sagi, 2008). Empirical data show that there is a relation between attachment to mother, father and friends and self-esteem, psychological health, social competencies, and adjustment during middle childhood and adolescence (Burke & Weir, 1978; Hoffman, Ushpiz, & Levy-Shift, 1988; Main, Kaplan, & Cassidy, 1985; Suess, Grossman, & Sroufe 1992).

This paper is about adolescents' self-concept development in the context of attachment relationships. Self-concept is defined as cognitive generalisation of oneself, as conscious representation of experience that a person has of oneself, which consists of evaluated perceptions, thoughts and feelings about oneself as an object and a partner in interaction (Damon & Hart, 1991; Harter, 2006). Self-concept is a multidimensional construct. We can distinguish global evaluations of oneself as a person (usually referred to as global self-worth) from evaluations of one's own competencies and attributes in specific domains (academic, cognitive, social...). The number and content of these specific dimensions of self-concept change with age (Harter, 1988; 2006). Until the end of adolescence, self-concept reaches its most complex and comprehensive form.

Self-concept is a social construct. It develops in the context of social interactions with "significant others" (Mead, 1934): parents, friends, teachers. Previous researches have shown that specific dimensions of self-concept depend on specific context and relations with different persons (Krstić, 2002). Hence the idea that the quality of attachment with parents and friends will have effects on adolescents' self-concept.

Previous research on the relation between attachment and self-concept

In the literature which refers to children's or adolescents' self-descriptions and self-evaluations, a number of terms are used: self-concept, self-perception, self-worth, self-esteem, etc. They differ according to theoretical perspective and measuring instruments (Krstić, 2002), which is why it is very difficult to compare results from different studies that use different concepts and different instruments, but describe similar phenomena. In the section below we will present some researches relevant to the topic of this paper.

A number of studies have shown that secure attachment has positive effects on self-worth and self-perception (Cassidy, 1988; Clark & Symons, 2000; Verschueren, Marcoen, & Schoefs., 1996) and on the stability and consistency of self-perception and self-evaluation from childhood to adolescence (Colman & Thompson, 2002; Goodvin, Meyer, Thompson, & Hayes 2008; Easterbrooks & Abeles, 2000).

Generally speaking, secure attachment is found to correlate with more positive self-worth, closer relationships with parents, more positive relations with friends and peers, and better acceptance among peers in adolescence (Allen, Moore, Kuperminc, & Bell, 1998; Sroufe, Egeland, Carlson, & Collins, 2005).

Several studies aimed to investigate relations between attachment to parents and friends with different aspects of self-perception in adolescence. Armsden and Grinberg (1987) found that attachments to parents and to friends are important predictors of self-esteem and life satisfaction in adolescence. Attachment to parents accounted for about 17% of variance of self-esteem and life satisfaction, while peer attachment appeared to be more related to self-esteem (accounting for 9% of variance) than to life-satisfaction (accounting for 6% of variance). Series of studies suggest that attachment to parents is more important than attachment to friends for psychological well-being in adolescence (Raja, Mcgee, & Stanton, 1992). Close and secure relation with parents allows adolescent to experiment and to research, and those behaviours are very important in adolescence (Armsden & Greenberg, 1987; Greenberg, Siegel, & Leitch 1983).

In one study, authors (Wilkinson & Walford, 2001) found that parental attachment but not peer attachment contributed significantly to predicting adolescents' well-being. In another study, using structural equation modelling, it was discovered that the relation between peer and parental attachment and psychological health is mediated by self-esteem (Wilkinson, 2004). In yet another study, it was established that mother attachment was associated with both self-liking and self-competence, peer attachment was significant just for self-liking, and father attachment was insignificant for both measures of self-esteem (Wilkinson & Parry, 2004).

Results also differ regarding developmental changes during adolescence. In one study it was found that the attachment to parents remains important for self-esteem from early to late adolescence (Walker & Green, 1986). However in another study, results indicate that adolescents kept stable quality of affection towards their mothers, but while girls utilised mothers' support more, boys' need for mothers' support and proximity decreased with age. Quality of affection towards father decreased for both adolescent boys and girls, as well as their utilisation of father for support and proximity (Paterson, Field, & Pryor, 1994). Over time, both boys and girls increasingly rely on support and proximity of friends.

Empirical findings regarding the importance of attachment to mother, father and friends for adolescent's self-esteem are inconsistent. Several studies suggest that paternal attachment is the most important (Gecas & Schwalbe, 1986; LeCroy, 1988), especially for boys (Cubis, Lewin, & Dawes, 1989). Findings from other studies, suggest that parental attachment has larger effect than peer attachment, regardless of the age of adolescent (Armsden & Greenberg, 1987; Burke & Weir, 1978; Gecas, 1972; Greenberg et al., 1983). On the other hand, some results suggest that the correlation between attachment to friends and adolescent's adjustment (.54) and self-concept (.47) is greater than correlations of attachment to parents (.38 and .18, respectively) (Cotterel, 1992).

Recently, several meta-analytic studies have shown small-to-medium (0.27) overall correlation between peer attachment and global self-esteem (Gorrese & Ruggieri, 2013), overall effect size linking parental attachment and children's peer relations from $r = .19$ (Pallini, Baiocco, Schneider, Madigan, & Atkinson, 2014), $r = .20$ (Schneider, Atkinson, & Tardif, 2001) to $r = .26$ (Benson, McWey, & Ross 2006), comparable to small to moderate overall effect size of $r = .22$ linking parental attachment and adolescent adjustment (Rice, 1990) and $r = .231$ linking parental attachment and students adjustment (Mattanah, Lopez, & Govern, 2011).

Findings from O'Koon (1997) suggest that parental and peer attachments correlate with different dimensions of self-perception: mother attachment with family relationships (highest obtained correlation .68), then with emotional tone (.30) and psychopathology (.26); father attachment also with emotional tone (.35), family relationships (.53) and mastery of world (.26) and educational goals (.20), while peer attachment was correlated with almost all dimensions except family relationships and educational goals, including body image, social relationships, sexual attitudes, idealism, etc. (correlations range from .24 to .39).

In several cross-cultural studies it was shown that attachment to mother affects self-esteem, well-being (anxiety and loneliness), identity foreclosure, self-confidence, vocational attitudes, and ethnic identity, while attachment to father is important for social functioning in adolescence (Kenny, Griffiths, & Grossman 2005; Leondari & Kiosseoglou, 2000; Matos, Barbosa, De Almeida, & Costa, 1999). Attachment to parents is also correlated with better adjustment in ethnic and racial minority groups among American high-school and college students (Hinderlie & Kenny, 2002; Kenny et al., 2005). Securely attached adolescents have greater self-esteem which leads to greater self-concept clarity (Wu, 2009).

In sum, from the theoretical point of view, a child develops attachment to more than one person (Lewis, 2005; Newcombe & Reese, 2004; Takahashi, 2005; Thompson, 2005; Weisner, 2005), and the quality of those attachment relations affect different areas of psychological functioning in later life (Howees, 1999; van Ijzendoorn & Sagi, 2008). A number of researches have shown that attachment relations are significant for various psychosocial outcomes in adolescence and later life (Burke & Weir, 1978; Hoffman et al., 1988; Main et al., 1985; Suess et al., 1992). Still, results regarding the importance of attachment to mother, father and friends for different aspects of self-perception and self-evaluation are inconsistent (Cotterel, 1992; Gecas & Schwalbe, 1986; Kenny et al., 2005; LeCroy, 1988; Leondari & Kiosseoglou, 2000; Matos et al., 1999; Paterson et al., 1994; Raja et al., 1992; Wilkinson & Parry, 2004; Wilkinson & Walford, 2001). Furthermore, we were unable to find researches relating attachment with dimensions of self-concept defined as evaluations of one's own competencies and attributes in specific domains (academic, cognitive, social...) (Harter, 2006). So the "dilemma" concerning the importance of parental and peer attachment for specific dimensions of adolescents' self-concept still remains.

On the other hand, researches have indicated a correlation between attachment and different personality traits (empathy, prosocial behaviour, aggressive behaviour anxiety, etc.) and some of these traits (self-esteem, empathy, prosocial behaviour) mediate in the relation between attachment and

the quality of peer relations, adjustment or psychological health (Dekovic & Meeus, 1997; Laible, Carlo, & Roesch, 2004; Wilkinson, 2004). Therefore, the relation between attachment relations and different dimensions of psychological functioning could be direct or mediated by personality traits.

The role of personality traits

“The five-factor model“ is an empirically well based framework for explaining large part of individual differences in non-cognitive domain of personality (John & Srivastava, 1999; Knežević, Džamonja-Ignjatović, & Đurić-Jočić, 2004). Consequently, attachment theorists and researchers had to show that attachment variables are not just “clones“ of already existing personality traits. It is empirically proven that individual differences in attachment cannot be reduced to differences in personality traits (Nofle & Shaver, 2006; Picardi, Caroppo, Toni, Bitetti, & Di Maria, 2005; Shaver & Brennan, 1992). Shaver and Brennan (1992) were the first to study correlations between dimensions of attachment and Big five personality traits. They found that attachment anxiety is in positive correlation with neuroticism, but not to the extent that would suggest redundancy of two concepts ($r = .33$). After their study, a number of researchers studied correlations of attachment and Big five personality traits. According to the summary of past findings from 14 studies on attachment dimensions and the Big five, by Nofle & Shaver (2006), results suggest that secure attachment has a moderate negative correlation with Neuroticism, moderate positive correlation with Extraversion and Agreeableness, a small positive with Conscientiousness, and no correlation with Openness to experience (Becker, Billings, Eveleth, & Gilbert 1997; Carver, 1997; Shafer, 2001; Shaver & Brennan, 1992; Wilkinson & Walford, 2001). Results also suggest that attachment anxiety is in moderate to strong correlation with Neuroticism, and in no correlation with Openness (Baekstroem & Holmes, 2001; Becker et al., 1997; Shaver & Brennan, 1992; Shaver et al., 1996). Evidence about relations with the rest of the Big five traits are inconsistent. Attachment avoidance has a small to moderate negative correlation with Extraversion and Agreeableness, and has no correlation with Openness (Baekstroem & Holmes, 2001; Becker et al., 1997; Gallo, Smith, & Ruiz, 2003; Shafer, 2001; Shaver & Brennan, 1992). In some, but not all, studies a positive correlation with Neuroticism and negative correlation with Conscientiousness were established (Nofle & Shaver, 2006).

Additionally, researches have also shown a relation between self-perception and personality traits. However, even though both concepts have been subjects of numerous studies, there are just a few focusing on the relation between personality traits as core, basic dimensions and dimensions of self-perceptions as peripheral, surface personality characteristics. Studies of these relations suggest that self-worth is in negative correlation with Neuroticism, and in positive correlation with Extraversion, and slightly less with Openness to experience, Agreeableness and Conscientiousness. These traits account for 34% of variance of self-worth (Judge, Erez, & Bono, 1998; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2006; Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001; Watson, Suls, & Haig, 2002). Results

of rare studies of correlations between personality traits and self-perceptions as multidimensional constructs support the idea of existence of multiple dimensions of self-perception and personality traits as moderately correlated but still different dimensions of personality (Marsh et al., 2006). Results suggest that dimensions of self-perception measure something different from personality traits.

Therefore, previous studies indicate that attachment and self-concept are correlated with personality traits, but also that they describe individual differences that cannot be reduced to differences in personality traits. Baron and Kenny (1986) formulated the criteria that must be met in order to consider a variable as a mediator. According to that criteria applied to our example, there are three requirements: attachment and self-concept are correlated, attachment is correlated with personality traits, and self-concept is correlated with personality traits. Research findings mentioned previously imply that all three requirements are met in our case, so the important research question is whether the relation between attachment relationships and dimensions of self-perception is mediated by personality traits.

The present study

On the whole, a large number of researches investigated the relation between attachment and self-concept, self-esteem, self-perception, self-evaluation and similar concepts at various ages. The results are not clear and consistent, leaving some questions unanswered. How are attachment relations with different people (mother, father, friends) related to specific dimensions of self-perception profile? Which dimensions of self-concept are related to specific attachment relations (H1)? Do these complex relations change over adolescence (H2)? Are those relations direct or mediated by personality traits (H3)?

The main aim of the research is to study relations between attachment to mother, father and friends and dimensions of adolescents' self-concept. More specifically, we examine if personality traits mediate this relation between attachment and self-concept in adolescence. Empirical evidence suggests that during adolescence the impact of parents and peers on adolescent's self-concept change (Krstić, 2002). For that reason, the relation between attachment relations and self-concept in this study was examined at the age of early and middle adolescence.

Hypotheses.

- 1) Attachment styles to mother, father and friend are correlated with different dimensions of self-concept: peer attachment will be correlated with social dimensions of self-concept; mother attachment with physical appearance, behaviour and global self-worth; and father attachment with academic and athletic competencies) (Harris, 1998; Thompson, 2005; van Ijzendoorn & Sagi, 2008);
- 2) At older adolescent age attachment to friends will have more effects on self-concept than parental attachment (Krstić, 2002; Bretherton, 1985; Harter, 2006);
- 3) Personality traits will mediate a part of relation between attachment and self-perception (Marsh et al., 2006; Shaver & Brennan, 1992; Picardi et al., 2005).

Method

Sample

This research was conducted on a sample of 878 13 and 16 year-old students (53.4% females) attending lower and upper secondary education in five urban schools in Belgrade.

Variables

Attachment to mother, father and friend; measured as 1) attachment-related dimensions of anxiety and avoidance; and 2) attachment style to each figure: secure attachment style, or insecure dismissing, preoccupied and fearful attachment style.

Adolescent Self-perception profile measured through eight dimensions: Physical Appearance, Scholastic and Athletic Competence, Social Acceptance, Behavioural Conduct, Close Friendship, Romantic Appeal and Global Self-Worth.

Personality traits, according to “the five-factor model”: Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness.

Instruments

- I) **Self-Perception Profile for Adolescence** (Harter, 1988). This instrument taps nine self-concept domains, of which eight were used in this research¹: Physical Appearance, Scholastic and Athletic Competence, Social Acceptance, Behavioural Conduct, Close Friendship, Romantic Appeal and Global Self-Worth. There are a total of 40 items, five for each sub-scale. Each item has “a structured alternative format” (Harter, 1982) which consists of two opposite descriptions. The adolescent is asked to decide which description fits him/her better and then he/she decides whether the description is “Really True for Me” or “Sort of True for Me”. Each item is scored on a four-point scale, where score 1 indicates the lowest perceived competence and the score of 4 indicates the highest level of competence (Harter, 1988).
- II) A modified version of **Experience in Close Relationships** (Brennan, Clark, & Shaver, 1998), is a self-report measure of attachment designed to assess attachment-related avoidance and anxiety, and on the basis of their scores, adolescents can be classified into a specific attachment category (secure, dismissing, preoccupied and fearful.) Modified versions used in this research consist of parallel scales designed to measure attachment relationship with mother, father and friend (Kamenov & Jelić, 2003). Each scale consists of 18 Likert-type items (9 for each dimension), and responses range on seven-point scale, where 1 means “Strongly Disagree” and 7 means “Strongly Agree”. This shortened and modified version of questionnaire has kept the two-factorial structure and has a satisfactory reliability (Cronbach’s alpha ranged from .73 to .87).
- III) **NEO FFI** short version of NEO-P-R (Costa & McCrae, 1985; adaptation Đurić-Jočić, Džamonja-Ignjatović, & Knežević, 2004) was used for personality trait assessment. It provides a quick and reliable measure of the five domains of personality: Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. It is a 60-item inventory (12 per domain), answered on a five-point Likert scale.

Procedure

After a parental approval and adolescents’ informed consent were obtained, participants were administered questionnaire booklets, which consist of six questionnaires in balanced order (ECR for mother, father and friend, SPP and NEOFFI). The questionnaires were completed in group sessions, during regular school classes, with average testing duration of 60 min for younger and 45 min for older students.

1 The ninth dimension, Job Competence, was not applicable for age-groups studied in this research and it was excluded.

Results

At the beginning we analysed the frequency of different attachment styles in relation to mother, father and friend in our sample of adolescents. As Table 1 shows, our adolescents are predominantly securely attached to all three figures; almost all of them to a friend.

Table 1
Frequency of attachment styles in relation to mother, father and friend

Attachment figure / style	Mother <i>N</i> (%)	Father <i>N</i> (%)	Friend <i>N</i> (%)
Secure attachment	649 (73.9%)	551 (62.8%)	720 (82%)
Preoccupied attachment	50 (5.7%)	42 (4.8%)	92 (10.5%)
Dismissing attachment	157 (17.9%)	245 (27.9%)	54 (6.2%)
Fearful attachment	21 (2.4%)	16 (1.8%)	12 (1.4%)

Distribution of attachment styles is similar to those obtained in previous studies on adolescents (Hanak, 2009; van Ijzendoorn & Bakermans-Kranenburg, 1996), with a somewhat more secure attachment in our sample.

Relation between attachment and self-concept – canonical correlation

To determine the associations between the attachment and dimensions of self-concept, canonical correlation between attachment-related anxiety and avoidance in relation to mother, father and friend, and eight dimensions of self-concept were used. Previous studies have shown that there are gender differences, so canonical correlations were calculated for four subsamples: younger and older, boys and girls.

Table 2
Statistics for the canonical functions

age/gender	canonical roots	<i>r</i>	<i>Wilk's λ</i>	χ^2	<i>df</i>	<i>p</i>
LSS_b	1	.606	.492	144.21	48	.000
	2	.367	.778	50.99	35	.039
LSS_g	1	.609	.487	154.49	48	.000
	2	.414	.773	55.22	35	.016
USS_b	1	.530	.534	111.45	48	.000
	2	.359	.742	53.00	35	.026
USS_g	1	.587	.502	153.92	48	.000
	2	.369	.766	59.61	35	.006

Note. LSS – lower secondary; USS – upper secondary school; b – boys, g – girls

Canonical roots of attachment dimensions explain 9% to 14% of variance of adolescents' self-concept scores. Results show that dimensions of attachment are correlated with dimensions of self-concept, but percentages of explained variance are small. That means that based on the data on attachment we cannot

conclude much about adolescents' self-concept. Moreover, we can see that with the age, the percentage of explained variance decreases (and more for boys), which means that correlations between attachment and self-concepts are smaller at older than on younger adolescent age.

Table 3
Canonical roots and percentage of explained variance

	Age	Total %	
		boys	girls
Att-->SC	LSS	.141	.117
	USS	.097	.089

Note. LSS – lower secondary school; USS – upper secondary school;
Att – attachment; SC – self-concept

Analysis of the structure of canonical roots shows that in all four subsamples dimensions defining the first canonical root are peer attachment-related Avoidance and the Friendship and Social acceptance dimensions in the self-concept profile (Appendix). Besides, there are no clear patterns of relations between parental attachments and specific dimensions of self-concept. Comparing attachment to mother and father, we can conclude that attachment to father is less important for self-concept of older adolescents, especially for boys. These results suggest that the quality of attachments to friends affects adolescents' social self-concept while the quality of attachments to parents, and especially to father, does not make much difference in the self-perception profiles of our adolescents.

Relation between attachment and self-concept – multiple regression analysis

In order to perform a thorough study of the relations between given variables, a multiple regression analysis (Enter method) was conducted. When the attachment-related anxiety and avoidance were introduced as predictors, they accounted for only 13% of total variance in dimensions of self-concept (Table 4) (total variance is calculated as the average of all regression coefficients). Percentages of variance which dimensions of attachment explain in every dimension of self-concept range from 0.6% to 3.5% (Table 5). Thus, these results confirm once again that there is a relation, albeit weak, between attachment styles and self-concept profiles in adolescence.

Age differences in relation between attachment and self-concept

Taking all the above results in consideration, we can also analyse age differences in relation between attachment and self-concept. Firstly, as previously stated, the results from canonical correlation show that the percentage of explained variance decreases with age, which means that attachment and self-concept correlations are smaller at older than at younger adolescent age (Table 3).

Furthermore, at the older age canonical factors are defined by fewer dimensions of attachment; dimensions of attachment to father do not participate in the structure of correlations between attachment and self-concept of older boys and in the structure of the first factor for older girls (Appendix). Furthermore, we can analyse age differences in regression analysis for attachment dimensions as predictors of self-concept (Table 5). Still, based on the inspection of the number and values of standardised regression coefficients (β) for attachment dimensions as predictors of self-concept for younger and older adolescents, we cannot draw conclusions regarding age differences. There is no clear pattern which would suggest that with age the importance of peer attachment for adolescents' self-concept increases, as we anticipated.

Relation between attachment and self-concept – personality traits as mediators

The next aim of this study was to analyse whether this relation between attachment and self-concept is mediated by personality traits. The question is which dimensions of attachment are correlated with dimensions of self-concept independently of personality trait? In order to analyse that, a hierarchical regression analysis with three sets of variables was performed. Firstly, personality traits were introduced, followed by dimensions of attachment as predictors of self-concept. Thus it can be concluded what *added* percentage of variance of self-concept can be explained by the dimensions of attachment.

When personality traits are introduced in the prediction, they account for 23% of variance of self-concept dimensions. Subsequently, attachment dimensions explain additional 4.3% of variance in adolescents' self-concept over and above personality traits (Table 4). The largest part of the variance of self-concept dimensions mediated by personality traits comes from attachment-related Anxiety in relations with mother and friend. The correlation between self-concept dimensions and attachment-related Anxiety in relations with mother and friend can be explained by personality traits, especially neuroticism. Interestingly, the dimension of Anxiety with friends remains significant, independently of personality traits, for younger boys, for dimensions Friendship, Self-worth and Athletic competence, and for Social acceptance and Self-worth for older boys. However, that is not the case when it comes to the Anxiety with father. This dimension has significant contribution in five cases and is not mediated by personality traits. Attachment-related Anxiety with father is correlated with dimensions Behavioural Conduct and Friendship for older girls and with Social acceptance, Romantic relations and Physical appearance for younger boys. Still, girls who are less anxious with their fathers have more positive concepts of themselves, while boys who are less anxious in relation with their fathers have more negative concepts of themselves on those three dimensions.

Table 4
 Standardised regression coefficients (β) for attachment (Att) and personality traits (NEO)
 as predictors of self-concept

Self-concept dimension	Age/ gender	R^2 Att	R^2 Att after NEO	R^2 NEO
Scholastic Competence	LSS_b	0.103		0.262
	LSS_g	0.070		0.365
	USS_b	*		0.257
	USS_g			0.216
Social Acceptance	LSS_b	0.163	0.071	0.220
	LSS_g	0.179	0.061	0.299
	USS_b	0.153	0.044	0.379
	USS_g	0.155	0.058	0.272
Physical Appearance	LSS_b	0.132	0.055	0.150
	LSS_g	0.067		0.142
	USS_b	0.114	0.049	0.221
	USS_g			0.189
Romantic Appeal	LSS_b	0.183	0.092	0.191
	LSS_g	0.052		0.248
	USS_b	0.100		0.290
	USS_g	0.058		0.184
Behavioural Conduct	LSS_b	0.082		0.152
	LSS_g	0.115	0.041	0.292
	USS_b	0.063		0.169
	USS_g	0.125	0.071	0.239
Close Friendship	LSS_b	0.207	0.121	0.183
	LSS_g	0.352	0.202	0.207
	USS_b	0.212	0.096	0.201
	USS_g	0.278	0.213	0.104
Global Self-Worth	LSS_b	0.170	0.062	0.281
	LSS_g	0.128		0.383
	USS_b	0.145	0.051	0.431
	USS_g	0.100		0.353
Athletic Competencies	LSS_b	0.167	0.078	0.174
	LSS_g			0.109
	USS_b			0.108
	USS_g			0.114
Total (%)		0.134	0.043	0.231

Note. LSS – lower secondary school; USS – upper secondary school; b – boys; g – girls; Total is a mean value of regression coefficients;

* only significant regression coefficients are shown

The contribution of attachment-related Avoidance in relation to mother, father and friends to total correlations between attachment and self-concept proved to be mostly independent of personality traits. Dimensions of Avoidance in relations with parents have little contribution to total examined correlations. The most significant contribution that one attachment dimension has to total correlation with self-concept is a contribution of attachment-related Avoidance in relation with friends. This dimension contributes to the correlation with Social Acceptance and Friendship for all four adolescents groups, independently of personality traits. Interestingly, the relation of peer Attachment-related Avoidance with Romantic relations for all and Self-worth for boys is totally mediated by personality traits.

Table 5
Standardised regression coefficients (β) for attachment dimensions as predictors of self-concept before and after personality traits (NEO) are introduced

SC	Age/gender	R ²	R ² Att after NEO	F _{avoid}	F _{avoid after NEO}	F _{anx}	F _{anx after NEO}	M _{avoid}	M _{avoid after NEO}	M _{anx}	M _{anx after NEO}	P _{avoid}	P _{avoid after NEO}	P _{anx}	P _{anx after NEO}
School	LSS_b	0.103		*											
	LSS_g	0.070													
	USS_b									-0.187					
	USS_g														
SocAcc	LSS_b	0.163	0.071			0.181	0.154					-0.296	-0.194	-0.185	
	LSS_g	0.179	0.061		0.126					-0.211		-0.323	-0.198		
	USS_b	0.153	0.044									-0.333	-0.131	-0.215	-0.194
	USS_g	0.155	0.058									-0.374	-0.246		
Physic	LSS_b	0.132	0.055			0.205	0.198					-0.206	-0.132	-0.165	
	LSS_g	0.067								-0.174				-0.172	
	USS_b	0.114	0.049									-0.305	-0.237		
	USS_g														
Roman	LSS_b	0.183	0.092				0.133					-0.366	-0.258		
	LSS_g	0.052										-0.165			
	USS_b	0.100										-0.280			
	USS_g	0.058										-0.226			
Behav	LSS_b	0.082		-0.180											
	LSS_g	0.115	0.041					-0.222	-0.133					0.123	
	USS_b	0.063								-0.260					
	USS_g	0.125	0.071			-0.251	-0.269	-0.238	-0.151						
Friend	LSS_b	0.207	0.121									-0.303	-0.235	-0.233	-0.186
	LSS_g	0.352	0.202									-0.544	-0.462	-0.118	
	USS_b	0.212	0.096									-0.436	-0.332		
	USS_g	0.278	0.213	-0.130	-0.121	-0.144	-0.148					-0.500	-0.475		
Worth	LSS_b	0.170	0.062	-0.167	-0.183							-0.157		-0.210	-0.126
	LSS_g	0.128						-0.188						-0.221	
	USS_b	0.145	0.051		0.223					-0.179		-0.236		-0.181	-0.119
	USS_g	0.100												-0.182	
Athlet	LSS_b	0.167	0.078									-0.321	-0.224	-0.193	-0.139
	LSS_g														
	USS_b														
	USS_g										0.275				

Note. LSS – lower secondary school; USS-upper secondary school; b– boys; g– girls; F-avoidance/ anxiety related to father; M– avoidance/anxiety related to mother; P– avoidance/anxiety related to friend; School– School Competencies; SocAcc – Social Acceptance; Physic– Physical Appearance; Roman– Romantic Appeal; Behav– Behavioural Conduct; Friend– Close Friendship; Worth– Global Self-Worth; Athlet– Athletic Competencies.

Discussion

The aim of the research was to study relations between attachments to mother, father and friends and dimensions of adolescents' self-concept profiles, and the role personality traits have in that relation. Results show that there is a correlation, albeit weak, between attachment-related Anxiety and Avoidance and dimensions of self-concept in adolescence. Based on that it can be concluded that attachment influences adolescents' self-concepts, but based on attachment style we cannot say much about the profiles of adolescents' self-concept. The correlation of those two sets of dimensions is too small, hence specific self-concept profiles cannot be described based on the attachment styles of adolescents.

That implies that individual differences between self-concept profiles are too large even in a group of securely attached adolescents. This results could be a consequence of a large number of secure attachment styles in our sample in all three relations; consequently it is difficult to determine specific profiles. On the other hand, although attachment styles indicate specific internal working models of self and others, and results suggest that attachment styles have impact on self-concept, there are numerous domains of psycho-social functioning where different competencies could be displayed, or sources of pleasure and self-realisation found. This is particularly true in adolescence, when self-concept is developing and changing from one moment to another, from one context to another (Elliot & Feldman, 1990; Kimmel & Weiner, 1995; Noller & Callan, 1991). In previous study we found that adolescents' self-concept depends on representations of how significant others (parents and friends) see them (Krstić, 2008), but it seems it is independent of the quality of attachment with those significant others, *per se*.

The percentage of the explained variance of self-concept decreases with age, so the influence of attachment is smaller at the age of 16–17. The adolescents' self-concept is less dependent on the quality of relations with others in middle adolescence, and especially for boys. Besides, we could not find other age differences in relation between adolescents' self-concept and their attachment relations with different people. Previous studies suggest there are age differences in the importance of representations of how peers see them (Krstić, 2008), or utilisations, reliance on support and proximity of friends (Paterson et al., 1994), which is not in accordance with findings from this study. It seems that although importance of friends and of peer attachment increase over age, adolescents' self-concept does not depend on the quality of relations with friends but more on the cognitive aspects of social feedback they receive from peers.

The relation between attachment styles and self-concept in adolescence is mainly based on the relation between attachment-related Avoidance with friends and social dimensions of self-concept. This finding once again stresses the importance of friendships and peer relations as a secure base in adolescence (Ainsworth, 1989; Allan, 2008; Cassidy, 2001; Waters & Cummings, 2000). Friends in adolescence could serve as a secure base and as a base for developing

a positive model of self, but also for experimentation and research which are immensely important for identity development in adolescence. Adolescents who are securely attached to friend, and especially if they are also securely attached to one of their parents, tend to have higher self-worth and more positive perception of themselves on all or most dimensions of self-concept.

Although researchers have found specific effects of attachment to mother or to father on different aspects of psycho-social functioning in adolescence (Howees, 1999; van Ijzendoorn & Sagi, 2008), these differences were not confirmed in this study. The relation between parental attachment and particular dimensions of self-concept was not discovered in this research. This discrepancy may be due to the different instruments used for measuring either self-concept or attachment, or due to the age and gender differences neglected in previous studies. Attachment to mother is shown to be more important for adolescents' self-concept, especially in early adolescence, while attachment to father has an effect only on self-concept of girls. Therefore, these results do not contribute to the dilemma regarding the importance of attachment to different persons and the importance of parental and peer attachment for specific dimensions of self-concept (Lempers & Clark-Lempers, 1992; O'Koon, 1997; Paterson et al., 1994; Suess et al., 1992).

One of the findings from this study deserves special attention: the relation between attachment to parents and friends and adolescents' self-concepts is not the same for boys and girls and these gender differences should be studied more profoundly. Studies on gender differences in attachment revealed very mixed results (Kenny & Rice, 1995; Laible et al., 2004; Song et al., 2009; Wilkinson, 2004), particularly regarding the relation between parental and peer attachment and adolescents' self-concept (Cubis et al., 1989; Song et al., 2009). These findings were not elaborated here in detail, but they indicate that we could not speak about a relationship between attachment and adolescents' self-concept independently of gender. Gender differences in attachment and self-concept represent an important topic which deserves special attention in further research.

Regarding the role of personality traits, results of this study suggest that the relations between attachment and self-concept are largely mediated by personality traits. Attachment-related Anxiety in relation to mother and friend can be explained almost completely by neuroticism, but Anxiety in relation to father is dependent on the real quality of interaction with a father. Attachment-related avoidance is independent of personality traits and it is a reflection of dyadic relation. Our findings indicate that there is a small correlation between attachment-related dimensions and self-concept in adolescence that is independent of personality traits.

These results go in line with the ideas about the significance of social relation for the self-concept of adolescence. This study is in concordance with the assumptions about importance of "the looking-glass self" (Cooley, 1902; Mead, 1934; Opačić, 1995) for adolescents' self-concept, especially for girls. During adolescence the relations with and feedback from peers and

friends become particularly important (Krstić, 2002; 2008; Harter, 2006). The attachment to parents and friends has an impact on adolescents' self-concept, but that influence is largely mediated by personality traits. Neuroticism as a personality trait explains the effect of attachment-related Anxiety with mother and friend on adolescents' self-concept. On the other hand, Anxiety with father is independent of personality traits. It seems that the nature and meaning of attachment-related Anxiety varies in different relations. While Anxiety in relation with mother and friends, as an internal working model of oneself in those relations, can be explained with more basic tendency towards negative emotions, Anxiety in relation with father is less based on basic personality traits and more a reflection of specific experience of oneself in everyday interactions with the father. It might be assumed that tendency towards negative emotions will lead to more frequent activation of attachment activity, and that adolescents with high scores on neuroticism will need a safe haven or a secure base more often and probably will worry more about availability of mother or a friend (Crawford, Shaver, & Goldsmith, 2007). Mother is a primary attachment figure, but in the course of adolescence friends become more and more important; adolescents need their closeness, support, security, hence those who are prone to negative emotions will worry more about their availability and will react more negatively when experiencing an inadequate response. On the other hand, father has less importance as an attachment figure. In attachment to father, we have got the least securely attached adolescents, and the most dismissing styles, in comparison to attachments to mother and friends. It can be assumed that those who are prone to negative emotions will not be anxious in relation with father but will avoid closeness with him in order to avoid to be hurt or left alone.

Conclusion

The focus of the research was to study relations between attachment to mother, father and friends and dimensions of adolescents' self-concept, and the role of Big five personality traits as mediators. Findings suggest that there is a correlation, albeit weak, between dimensions of attachment and dimensions of self-concept, and that correlation is independent of personality traits and decreases during adolescence. The quality of attachments to parents cannot predict the profile of adolescents' self-concept, while attachment to friends is correlated with social dimensions of self-concept. There are significant gender differences in the relations between attachment and self-concept.

Limitations of this study involve methodological issues. Although we utilised the most commonly used questionnaires, operationalisation and measuring of both attachment and self-concept represents just one of numerous possible ways. As discussed earlier, this makes comparison of results difficult. Therefore, the question of relations between attachment and self-concept remains unanswered. Results suggest that in investigating these relations we should be sensitive to gender and age differences. In this study we got a very large number of adolescents securely attached to friends, which raises the question of

whether this questionnaire, method and design of investigating peer attachment are sensitive enough to reveal small and fine differences in the quality of peer attachment relations.

References

- Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist*, *44*(4), 709–716.
- Allen, J. P. (2008). Attachment in adolescence. In J. Cassidy & P. Shaver (Eds.), *Handbook of attachment: Theory, Research and Clinical Applications*, 2nd ed. (pp. 419–435). New York: Guilford Press.
- Allen, J. P., Moore, C. M., Kuperminc, G. P., & Bell, K. L. (1998). Attachment and adolescent psychosocial functioning. *Child Development*, *69*, 1406–1419.
- Arens, A. K., & Hasselhorn, M. (2015). Differentiation of competence and affect self-perceptions in elementary school students: extending empirical evidence. *European Journal of Psychology of Education*, *30*(4), 405–419.
- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*, 427–454.
- Baekstroem, M., & Holmes, B. M. (2001). Measuring adult attachment: A construct validation of two self-report instruments. *Scandinavian Journal of Psychology*, *42*, 79–86.
- Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research – Conceptual, Strategic, and Statistical Considerations, *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.
- Becker, T. E., Billings, R. S., Eveleth, D. M., & Gilbert, N. W. (1997). Validity of scores on three attachment style scales: Exploratory and confirmatory evidence. *Educational and Psychological Measurement*, *57*, 477–493.
- Benson, M. J., McWey, L. M., & Ross, J. J. (2006). Parental attachment and peer relations in adolescence: A meta-analysis. *Research in Human Development*, *3*, 33–43. doi:10.1207/s15427617rhd0301
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview; In J.A. Simpson & W.S Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Bressoux, P., & Pansu, P. (2016). Pupils' self-perceptions: the role of teachers' judgment controlling for big-fish-little-pond effect. *European Journal of Psychology of Education*, *31*(3), 341–357.
- Bretherton, I. (1985). Attachment Theory: Retrospect and Prospect. *Monographs of the Society for Research in Child Development*, *50*(1/2), 3–35. doi:10.2307/3333824 www.jstor.org/stable/3333824
- Burke, R. J., & Weir, T. (1978). Sex differences in adolescent life stress, social support, and well-being. *Journal of Psychology*, *98*, 277–288.
- Carver, C. S. (1997). Adult attachment and personality: Converging evidence and a new measure. *Personality and Social Psychology Bulletin*, *23*, 865–883.
- Cassidy, J. (1988). Child-Mother Attachment and Self in Six-Year-Olds. *Child Development*, *59*, 121–134.
- Cassidy, J. (2001). Truth, lies and intimacy: An attachment perspective. *Attachment and Human Development*, *3*(2), 121–155.
- Clark, S. E., & Symons, D. K. (2000). A longitudinal study of Q-sort attachment security and self-processes at age 5. *Infant and Child Development*, *9*, 91–104.
- Colman, R. A., & Thompson, R. A. (2002). Attachment security and the problem-solving behaviors of mothers and children. *Merrill-Palmer Quarterly*, *48*, 337–359.

- Cooley, C. H. (1902). *Human Nature and Social Order*. Ch. New York: Scribner's Sons.
- Cotterell, J. L. (1992). The relation of attachments and supports to adolescent well-being and school adjustment. *Journal of Adolescents Research*, 7, 28–42.
- Crawford, T. N., Shaver, R. P., & Goldsmith, H. H. (2007). How affect regulation moderates the association between anxious attachment and neuroticism. *Attachment & Human Development*, 9(2), 95–109.
- Cubis, J., Lewin, T., & Dawes, F. (1989). Australian adolescents' perceptions of their parents. *Australian and New Zeland Journal of Psychiatry*, 23, 35–47.
- Damon, W., & Hart, D. (1991). *Self-understanding in childhood and adolescence*. Cambridge, U.K.: Cambridge University Press.
- Dekovic, M., & Meeus, W. (1997). Peer relations in adolescence: Effects of parenting and adolescent's self-concept. *Journal of Adolescence*, 20, 163–176.
- Đurić-Jočić, D., Džamonja-Ignjatović, T., i Knežević, G. (2004). *NEO PI-R: primena i interpretacija*. Beograd: Centar za primenjenu psihologiju.
- Easterbrooks, M. A., & Abeles, R. (2000). Windows to the self in eight-year-olds: Bridges to attachment representation and behavioral adjustment. *Attachment and Human Development*, 2, 85–106.
- Elliot, G., & Feldman, S. (1990). Capturing the Adolescent Experience; In S. Feldman & G. Eliot (Eds.), *At the Treshold: The Developing Adolescent* (pp. 1–13), London: Harvard University Press.
- Farant, K., & Reese, E. (2000). Maternal Style and Childrens Participation in Reminiscing: Stepping Stones in Childrens Autobiographical Memory Development. *Journal of Cognition and Development*, 1, 193–225.
- Gallo, L. C., Smith, T. W., & Ruiz, J. M. (2003). An interpersonal analysis of adult attachment style: Circumplex descriptions, recalled developmental experiences, self-representations and interpersonal functioning in adulthood. *Journal of Personality*, 71, 141–181.
- Gecas, V. (1972). Parental behaviour and contextual variations in adolescent self esteem. *Sociometry*, 35, 332–345.
- Gecas, V., & Schwalbe, M. L. (1986). Parental behaviour and adolescent self esteem. *Journal of Marriage and Family*, 48, 37–46.
- Goodvin, R., Meyer, S., Thompson, R., & Hayes, R. (2008). Self-understanding in early childhood: associations with child attachment security and maternal negative affect. *Attachment & Human Development*, 10(4), 433–450.
- Gorrese, A., & Ruggieri, R. (2013). Peer attachment and self-esteem: A meta-analytic review. *Personality and Individual Differences*, 55, 559–568.
- Greenberg, M. T., Siegel, J. M., & Leitch, C. J. (1983). The nature and importance of attachment relationships to parents and peers during adolescence. *Journal of Youth and Adolescence*, 12, 373–386.
- Grygiel, P., Modzelewski, M., & Pisarek, J. (2016). Academic self-concept and achievement in Polish primary schools: cross-lagged modelling and gender-specific effects. *European Journal of Psychology of Education*, 1–23. doi:10.1007/s10212-016-0300-2
- Hanak, N. (2009). *Činioci koji utiču na emocionalnu vezanost trudnica za fetus*. Doktorska disertacija. Beograd: Filozofski fakultet.
- Harris, J. R. (1998). *The Nurture Assumption: Why Children Turn Out the Way They Do*. New York: Touchstone Book.
- Harter, S. (1982). The perceived competence scale for children. *Child Development*, 53, 87–97.
- Harter, S. (1988). *Manual for teh Self-Perception Profile for Adolescents*. University of Denver, CO: University of Denver.
- Harter, S. (1998). The Development of Self-Representations. In W. Damon (Ed.), *Handbook of Child Psychology; Vol. 3: Social, Emotional and Personality Development* (5th ed) (pp. 553–617). New York: Wiley & Sons, Inc.

- Harter, S. (2006). The Self. In W. Damon & R. Lerner (Eds.) *Handbook of child development, 6th ed.* Vol 3., (pp. 505-570). New York: Wiley & Sons, Inc.
- Hinderlie, H., & Kenny, M. (2002). Attachment, social support, and college adjustment among black students at predominantly white universities. *Journal of College Student Development, 43*(3), 327–40.
- Hoffman, M. A., Ushpiz, V., & Levy-Shift, R. (1988). Social support and self esteem in adolescence. *Journal of Youth and Adolescence 17*, 307–316.
- Howeas, C. (1999). Attachment relationships in the context of multiple caregivers. In J. Cassidy, & P. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 671–687). New York: Guilford Press.
- John, O. P., & Srivastava, S. (1999). The big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed.) (pp. 102–138). New York: Guilford.
- Judge, T. A., Erez, A., & Bono, J. E. (1998). The power of being positive: The relation between positive self-concept and job performance. *Human Performance, 11*, 167–187.
- Kamenov, Ž., & Jelić, M. (2003). Validacija instrumenta za mjerenje privrženosti u različitim vrstama bliskih odnosa: Modifikacija Brennanovog Inventara iskustava u bliskim vezama. *Suvremena psihologija, 6*(1), 73–91.
- Kenny, M. E., Griffiths, J., & Grossman, J. (2005). Self-image and parental attachment among late adolescents in Belize. *Journal of Adolescence, 28*, 649–664.
- Kenny, M. E., & Rice, K. G. (1995). Attachment to parents and adjustment in late adolescent college students: current status, applications, and future considerations. *The Counseling Psychologist, 23*, 433–456.
- Kimmel, D., & Weiner, I. (1995). *Adolescence: A Developmental Transition*. New York: Wiley and Sons.
- Knežević, G., Džamonja-Ignjatović, T., & Đurić-Jočić D. (2004). *Petofaktorski model ličnosti*. Beograd: Centar za primenjenu psihologiju.
- Krstić, K. (2002). *Pojam o sebi adolescenata u socijalnom kontekstu* (Magistarska teza) Beograd, Filozofski fakultet.
- Krstić, K. (2008). Povezanost pojma o sebi i predstave adolescenata kako ih vide „značajni drugi”. *Psihologija, 41*(4), 539–553.
- Krstić, K. (2012). *Uticaj Afektivne vezanosti za roditelje i prijatelje na samopoimanje adolescenata* (Neobjavljena doktorska disertacija). Filozofski fakultet, Beograd.
- Laible, D., Carlo, G., & Roesch, S. (2004). Pathways to self-esteem in late adolescence: the role of parent and peer attachment, empathy, and social behaviours; *Journal of Adolescence, 27*, 703–716.
- LeCroy, C. (1988). Parent-adolescent intimacy: Impact on adolescent functioning. *Adolescence 23*, 137–147.
- Lempers, J. D., & Clarke-Lempers, D. S. (1992). Young, middle, and late adolescents comparisons of the functional importance of five significant relationships. *Journal of Youth and Adolescence, 21*, 54–96.
- Leonardi, A., & Kiosseoglou, G. (2000). The relationship of parental attachment and psychological separation to the psychological functioning of young adults. *The Journal of Social Psychology, 140*, 4, 451–464.
- Lewis, M. (2005). The Child and Its Family: The Social Network Model. *Human Development, 48*, 8–27.
- Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*, 66–104.
- Marsh, H., Trautwein, U., Lüdtke, O., Köller, O., & Baumert, J. (2006). Integration of Multidimensional Self-Concept and Core Personality Constructs: Construct Validation and Relations to Well-Being and Achievement. *Journal of Personality 74*(2), 403–456.

- Matos, P. M., Barbosa, S., De Almeida, H. M., & Costa, M. E. (1999). Parental attachment and identity in Portuguese late adolescents. *Journal of Adolescence*, 22, 805–818.
- Mattanah, J. F., Lopez, F. G., & Govern, J. M. (2011). The Contributions of Parental Attachment Bonds to College Student Development and Adjustment: A Meta-Analytic Review. *Journal of Counseling Psychology*, 58(4), 565–596. doi:10.1037/a0024635
- Mead, G. H. (1934). *Mind, Self and Society*. Chicago: Chicago University Press.
- Newcombe, R., & Reese, E. (2004). Evaluations and orientations in mother–child narratives as a function of attachment security: A longitudinal investigation. *International Journal of Behavioral Development*, 28, 230–245.
- Noftle, E. E., & Shaver, R. P. (2006). Attachment dimensions and the big five personality traits: Associations and comparative ability to predict relationship quality. *Journal of Research in Personality*, 40, 179–208.
- Noller, P., & Callan, V. (1991). *The Adolescent in the Family*. London: Routledge.
- O’Koon, J. (1997). Attachment to parents and peers in late adolescence and their relationship with self-image. *Adolescence*, 32(126), 471–483.
- Opačić, G. (1995). *Ličnost u socijalnom ogledalu*. Beograd: Institut za pedagoška istraživanja.
- Pallini S., Baiocco R., Schneider B. H., Madigan S., & Atkinson L. (2014). Early child-parent attachment and peer relations: a meta-analysis of recent research. *Journal of Family Psychology*, 28(1), 118–123. doi:10.1037/a0035736.
- Paterson, J. E., Field, J., & Pryor, J. (1994). Adolescents’ perceptions of their attachment relationships with their mothers, fathers, and friends. *Journal of Youth and Adolescence*, 23, 579–600.
- Picardi, A., Caroppo, E., Toni, A., Bitetti, D., & Di Maria, G. (2005). Stability of attachment-related anxiety and avoidance and their relationships with the five-factor model and the psychobiological model of personality. *Psychology and Psychotherapy: Theory, Research and Practice*, 78, 327–345.
- Radišić, J., Videnović, M., & Baucal, A. (2015). Math anxiety—contributing school and individual level factors. *European Journal of Psychology of Education*, 30(1), 1–20, doi:10.1007/s10212–014–0224–7
- Raja, S. N., McGee, R., & Stanton, W. R. (1992). Perceived attachment to parents and peers and psychological well-being in adolescence. *Journal of Youth and Adolescence*, 21(4), 471–485.
- Rice, K. G. (1990). Attachment in adolescence: A narrative and meta-analytic review. *Journal of Youth and Adolescence*, 19(5), 511–38. doi:10.1007/BF01537478.
- Robins, R. W., Tracy, J. L., Trzesniewski, K., Potter, J., & Gosling, S. D. (2001). Personality correlates of self-esteem. *Journal of Research in Personality*, 35, 463–482.
- Schneider, B. H., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children’s peer relations: A quantitative view. *Developmental Psychology*, 37, 86–100. doi:10.1037/0012–1649.37.1.86
- Shafer, A. B. (2001). The big Wve and sexuality trait terms as predictors of relationships and sex. *Journal of Research in Personality*, 35, 313–338.
- Shaver, P. R., & Brennan, K. A. (1992). Attachment style and the big five personality traits: Their connection with romantic relationship outcomes. *Personality and Social Psychology Bulletin*, 18, 536–545.
- Shaver, P. R., Papalia, D., Clark, C. L., Koski, L. R., Tidwell, M. C., & Nalbone, D. (1996). Androgyny and attachment security: Two related models of optimal personality. *Personality and Social Psychology Bulletin*, 22, 582–597.
- Song, H., Thompson, R. & Ferrer, E. (2009). Attachment and self-evaluation in Chinese adolescents: Age and gender differences. *Journal of Adolescence*, 32, 1267–2386.

- Sroufe, L. A., Egeland, B., Carlson, E., & Collins, W. A. (2005). *The development of the person: The Minnesota Study of Risk and Adaptation from Birth to Adulthood*. New York: Guilford Press.
- Suess, G. J., Grossman, K. E., & Sroufe, L. A. (1992). Effects of infant attachment to mother and father quality of adaptation in preschool: From dyadic to individual organization of self. *International Journal of Behavioural Development, 15*, 43–65.
- Takahashi, K. (2005). Toward a Life Span Theory of Close Relationships: The Affective Relationships Model. *Human Development, 48*, 48–66.
- Thompson, R. (2005). Multiple Relationships Multiply Considered. *Human Development, 48*, 102–107.
- van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (1996). Attachment representations in mothers, fathers, adolescents, and clinical groups: A meta-analytic search for normative data. *Journal of Consulting & Clinical Psychology, 64*, 8–21.
- van Ijzendoorn, M. H., & Sagi, A. (2008). Cross-Cultural Patterns of Attachment: Universal and Contextual Dimensions; In J. Cassidy & P. Shaver (Eds.), *Handbook of Attachment: Theory, Research and Clinical Application* (pp. 880–906). New York: The Guilford Press.
- Verschueren, K., Marcoen, A., & Schoefs, V. (1996). The internal working model of the self, attachment, and competence in five-year-olds. *Child Development, 67*, 2493–2511.
- Walker, L., & Greene, J. (1986). The Social Context of Adolescent Self-Esteem. *Journal of Youth and Adolescence, 15*, 315–322.
- Waters, E., & Cummings, E.M. (2000). A secure base from which to explore close relationships. *Child Development, 71*(1), 164–172.
- Watson, D., Suls, J., & Haig, J. (2002). Global self-esteem in relation to structural models of personality and affectivity. *Journal of Personality and Social Psychology, 83*, 185–197.
- Weisner, T. S. (2005). Attachment as a Cultural and Ecological Problem with Pluralistic Solutions. *Human Development, 48*, 89–94.
- Wilkinson, R. B. (2004). The Role of Parental and Peer Attachment in the Psychological Health and Self-Esteem of Adolescents. *Journal of Youth and Adolescence, 33*(6), 479–493.
- Wilkinson, R. B., & Parry, M. M. (2004). Attachment styles, quality of attachment relationships, and components of self-esteem in adolescence. *Proceedings of the 39th Australian Psychological Society Annual Conference*, 301–305. Melbourne: The Australian Psychological Society.
- Wilkinson, R. B., & Walford, W. A. (2001). Attachment and personality in the psychological health of adolescents. *Personality and Individual Differences, 31*, 473–484.
- Wu, C. H. (2009). The relationship between attachment style and self-concept clarity: The mediation effect of self-esteem. *Personality and Individual Differences, 47*, 42–46.

RECEIVED 16.06.2016.

REVISION RECEIVED 15.11.2016.

ACCEPTED 15.11.2016.

Appendix

Structure of canonical factors

Age/gender	Canonical root	Attachment dimension	Canonical loadings	Self-concept dimension	Canonical loadings
LSS_b	1. canonical root	P_avoidance	-.822	Friendship	.700
		P_anxiety	-.581	Athletic Comp.	.654
		M_anxiety	-.439	Romantic Appeal	.652
		F_avoidance	-.439	Social Acceptance	.651
		M_avoidance	-.286	Self-Worth	.631
	2. canonical root	F_anxiety	-.115	Physical App.	.566
		F_anxiety	-.749		
		M_avoidance	-.542	Scholastic Comp.	.560
		M_anxiety	-.531	Behavioral Conduct	.426
		P_anxiety	-.399	Romantic Appeal	-.420
LSS_g	1. canonical root	F_avoidance	-.311		
		P_avoidance	.241		
		P_avoidance	-.951	Friendship	.973
	2. canonical root	M_anxiety	-.356	Social Acceptance	.661
		P_anxiety	-.327	Romantic Appeal	.330
		M_avoidance	-.815	Behavioral Conduct	.806
		P_anxiety	-.680	Self-Worth	.716
		F_avoidance	-.525	Physical App.	.510
		M_anxiety	-.373	Scholastic Comp.	.509
		F_anxiety	-.277		
USS_b	1. canonical root	P_avoidance	-.888	Friendship	.824
		M_anxiety	-.464	Social Acceptance	.676
		P_anxiety	-.388	Self-Worth	.641
		P_anxiety	-.388	Physical App.	.598
	2. canonical root			Romantic Appeal	.578
		M_anxiety	.678	Athletic Comp.	.648
		P_avoidance	-.368	Behavioral Conduct	-.458
		P_anxiety	.306	Friendship	.364
USS_g	1. canonical root	M_avoidance	.266		
		P_avoidance	.953	Friendship	-.887
		M_avoidance	.398	Social Acceptance	-.631
	2. canonical root			Romantic Appeal	-.391
		P_anxiety	-.590		
		M_avoidance	-.569	Behavioral Conduct	.822
		F_anxiety	-.511	Self-Worth	.581
		M_anxiety	-.458	Scholastic Comp.	.519
F_avoidance	-.428				

Note. LSS – lower secondary school; USS-upper secondary school; b– boys; g– girls; F_avoidance/anxiety related to father; M_avoidance/anxiety related to mother; P_avoidance/anxiety related to friend;