

## Romantic Adult Attachment and Basic Personality Structure

*Jelena Zeleskov Djoric\* and Janko Medjedovic*

*Institute of Criminological and Sociological Research, Belgrade, Serbia*

**Abstract:** The main goal of this study was localization of attachment dimensions in the space described by basic personality traits. Study purported to examine relations between attachment and basic personality structure, in a sample of 203 respondents. Romantic adult attachment was measured by the Experience in Close Relationship Scale, basic personality structure was assessed by the NEO-PI-R personality inventory, and Disintegration, which represents operationalization of Schizotypy as a basic personality trait, was estimated by the Delta 10 test. The results of Principal component analysis showed that attachment dimensions are not separate constructs in relation to basic personality traits. Furthermore, results indicate that attachment dimensions represent emotional dysregulation in close interpersonal relationships, because positive correlations are found between dimensions of Attachment and Mania (.35), Anxiety (.51) and Depression (.55). Negative correlations have been obtained between Attachment and Positive emotions (-.34) and Feelings (-.31). These results suggest that Attachment dimensions should be considered as an expression of basic personality traits in romantic adult's relationships.

**Key words:** attachment, romantic relationships, five-factor personality model, disintegration

## Romantična navezanost odraslih in struktura osebnosti

*Jelena Želeskov Djoric\* in Janko Medjedovic*

*Inštitut za kriminološke in sociološke raziskave, Beograd, Srbija*

**Povzetek:** Glavni cilj študije je bil lokalizacija dimenzij navezanosti v implicitnem prostoru, določenem z osnovnimi dimenzijami osebnosti. Poleg tega je bil cilj študije tudi proučitev odnosov med navezanostjo in temeljnimi dimenzijami osebnosti na vzorcu 203 odraslih. Partnersko navezanost smo ocenili z Vprašalnikom izkušenj v intimnih partnerskih odnosih, temeljne osebnostne lastnosti smo ocenili z vprašalnikom NEO-PI-R. Dezintegracija, ki predstavlja operacionalizacijo shizotipije kot osnovne lastnosti osebnosti, smo ocenili z vprašalnikom Delta 10. Komponentna analiza je pokazala, da dimenziji navezanosti nista neodvisna konstrukta glede na temeljne osebnostne lastnosti. Poleg tega rezultati kažejo, da se dimenziji navezanosti nanašata na čustveno disregulacijo v intimnih medosebnih odnosih, saj smo dobili pozitivne korelacije med dimenzijama navezanosti in dimenzijami maničnosti (.35), anksioznosti (.51) ter depresivnosti (.55). Negativne korelacije smo ugotovili med navezanostjo in dimenzijama pozitivna čustva (-.34) ter občutki (-.31). Rezultati kažejo, da je dimenzije navezanosti potrebno opazovati kot izraz temeljnih osebnostnih lastnosti v partnerskih odnosih.

**Ključne besede:** navezanost, partnerski odnosi, petfaktorski model osebnosti, dezintegracija

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\* Address/Naslov: Institute of Criminological and Sociological Research, Gracanicka 18, 11000 Belgrade, Serbia,  
e-mail: jelena.zeleskov.djoric@gmail.com; jankomed@yahoo.com

According to the attachment theory every human being has an evolutionally created behavioral system which activates in moments of danger and which is reflected in the fact that a child seeks the proximity of a parental figure who gives it a feeling of security (Bowlby, 1969). While working with children without parental care, the founder of attachment theory, John Bowlby, has remarked that the mother-child relationship was of the utmost importance for the subsequent development of personality, as well as that the child's need for the mother is a primary human need (Bowlby, 1969). The term »attachment« primarily related to the unequal, specific relationship that is formed between the mother and the child in the earliest childhood and that lasts throughout life. As a consequence of the child's repeated and everyday experiences with the mother, the child begins to build an image of itself and others (primarily the mother). Depending on the mother's responsiveness to the child's signals, her sensitivity and availability to its needs, the child builds an image of itself as being more or less worthy of the mother's attention, as well as an image of the mother as a person who is there or is not there when it needs her. These mental models contain personal convictions and expectations about how the attachment system works, and consequently, the child organizes its behavior so as to gain the mother's attention.

Bowlby thought that belief in the availability and support of an attachment figure represents a significant condition of secure functioning throughout a person's life and that partnership relations can be seen as a prototype of adult affective relations (Bowlby, 1988). Observation of partner relations through the lenses of attachment theory begun by the end of the 1980s when Hazan and Shaver published a theoretical article entitled "A biased overview of the study of love", where they explained why partnership can be seen as an attachment process (Hazan & Shaver, 1988). The authors argued that adult partners exhibit behavioral characteristics identical to those observed in relations between the child and its caregiver, so that a person feels safer and more secure when his/her partner is nearby; when sad or ill, he/she seeks partner proximity as a source of comfort and protection. Moreover, the kinds of individual differences observed in child-mother relations are very similar to those observed between partners, because adults enter partnership with the expectations and beliefs that they have formed about themselves and others on the basis of their past affective bonds. These internal working models are relatively stable throughout a person's life. Starting from description of attachment in children, researchers developed various self-assessment instruments to measure attachment in adults (Brennan, Clark, & Shaver, 1998; Collins & Read, 1990). Although the category model of attachment propose four attachment styles, a dimensional model of adult attachment have been conceptualized recently. It's consisted of two dimensions – Anxiety and Avoidance (Brennan, Clark, & Shaver, 1998). Attachment Anxiety relates to beliefs about self-worth and whether or not one will be accepted or rejected by partner. Attachment Avoidance relates to beliefs about taking risks in approaching or avoiding other people. In this research we used dimensional model of adult attachment.

## Attachment and basic personality structure

There is a number of studies that tried to identify relationships between adult attachment and five personality traits obtained through lexical explorations of personality (Costa & McCree, 1992; John, Naumann, & Soto, 2008): Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness. Carver described negative correlations between the traits of Extraversion and Agreeableness and the dimension of Avoidance (Carver, 1997). There were also findings that linked attachment dimensions to other factors from the space of basic personality structure as well. Some studies have demonstrated that Anxiety and Avoidance correlated negatively with Agreeableness, Conscientiousness and Extraversion, and positively with Neuroticism (Gallo, Smith, & Ruiz, 2003; Nofle & Shaver, 2006; Donnellan, Burt, Levendosky, & Klump, 2008). Marušić, Kamenov, & Jelić (2006) have established that Openness correlated negatively with the dimension of Avoidance, in men and women alike, while the dimension of Anxiety was not significantly correlated with it.

One of the personality traits that was not adequately covered by the Big Five model is the disposition to psychotic experiences. Subsequent studies have demonstrated that the disposition to psychosis is a broad, continuous personality trait that consists of various modalities (Claridge, 2010), which represents the most important argument for considering this trait as a part of basic personality structure. Consistent with the idea that Disintegration represents a basic personality trait, are results of factor analysis of shared space defined by measures of dissociative experiences and Big Five traits: although dissociative experiences correlate positively with domain of Neuroticism, they form a latent component outside the space of of Big Five traits (Kwapil et al. 2002). Other studies (Ross, Lutz, & Bailley, 2002) found that positive aspects of schizotypy (cognitive aberrations that can produce hallucinations and delusions) were significantly predicted by Neuroticism ( $\beta = .26$ ), and Openness ( $\beta = .26$ ), while negative aspects (social anhedonia and withdrawal) were predicted by Extraversion ( $\beta = -.39$ ), Agreeableness ( $\beta = -.32$ ), Openness ( $\beta = -.28$ ) and Neuroticism ( $\beta = .13$ ).

One of the empirically based concepts of Schizotypy is Disintegration (Knežević, Opačić Kutlešić, & Savić, 2005). The structure of schizotypal traits was obtained through principal components analysis of various measures of Schizotypy and pro-psychotic experiences. It has been demonstrated that variations of these measures are most optimally explained by ten components that represent modalities of a broad dimension called Disintegration. These ten components are: *General executive dysfunction* (dysregulation of attention, planning, memory, emotional reactions etc.), *Perceptual distortions* (depersonalization and derealization), *Increased awareness* (synesthesia, responsiveness to aesthetic stimuli), *Depression* (pronounced feelings of sorrow, loneliness, self-pity etc.), *Paranoia* (suspicion, distrust, ideas of persecution and impression of conspiracy), *Mania* (elevated mood, high activity, extreme optimism etc.), *Social anhedonia* (shyness, preference for solitude, lack of the need to make friends), *Flattened affect* (emotional indifference, numbness, affective superficiality), *Somatoform dysregulation* (sensory and motor conversions, impression of change of internal organs, insensitivity to pain, and the

feeling of corporal numbing) and *Magical thinking* (belief in telepathy, illogical thinking, superstition, etc.).

Empirical findings suggest that schizotypal traits play an important role in explanation of attachment dimensions in adults. Thus, the dimensions of Anxiety and Avoidance correlate positively with paranoia, hallucinatory experiences and social anhedonia (Berry, Wearden, Barrowclough, & Liversidge, 2006), although when paranoia is controlled for, the relationship between hallucinations and attachment dimensions falls below the threshold of statistical significance (Pickering, Simpson, & Bentall, 2008). Furthermore, both dimensions correlate positively with cognitive disorganization (Berry, Band, Corcoran, Barrowclough, & Wearden, 2007). One of important studies that demonstrate the extent to which schizotypia is related to attachment is the one conducted by Tiliopoulos and Goodall. According to it, Anxiety correlates positively with cognitive, perceptual and interpersonal aspects of subclinical psychotic experiences. Moreover, it also correlates positively with unusual experiences, paranoid ideation, social Anxiety, reduced affect, eccentric behavior and unusual verbalization. Avoidance is a little less correlated with Schizotypy. Positive correlations were found between Avoidance and interpersonal aspects, paranoid ideation, social Anxiety, reduced affect and negative symptomatology of pro-psychotic experiences (Tiliopoulos & Goodall, 2009). These findings suggest that Schizotypy is without doubt exceptionally important for a better understanding of attachment in adults. These results provide some insight in the nature of Attachment dimensions: Avoidance, which is associated with negative images others, expresses itself in interpersonal relations as social indifference, isolation or social withdrawal. Attachment Anxiety has also social roots: a fear of losing a social object is a consequence of social information processing bias which represent a cognitive and perceptive aspects of Schizotypy.

## Goals of this study

In their article about relationships between attachment and the Big Five model, Nofle and Shaver state that every new psychological construct must demonstrate its irreducibility to basic personality traits, which means that new psychological construct must have an additional content which is not described in personality space. Otherwise, one could say that the construct is just a «clone» of basic personality traits that only bears another name, i.e. represents a different operationalization of the already conceptualized traits (Nofle & Shaver, 2006). In the psychology of individual differences, authors often postulate new concepts without offering clear indications about their distinctiveness in relation to the already existing constructs. Although a construct can theoretically be independent, that must be also proven empirically, by confirmation of its irreducibility to some more basic behavioral dispositions. Even if that does not take place, study of the phenomenon operationalized through that construct may not lose its importance, but its status is appropriately and precisely established, which unquestionably increases knowledge of the phenomenon under study.

In order to demonstrate attachment's independence from the Big Five model, authors that investigated this topic (Nofle & Shaver, 2006; Donnellan et al., 2008) reported

correlations that were indeed of moderate intensity. However, maybe this goal would be better served by some of the methods of grouping of observed measures around their latent components, such as multidimensional scaling or factor analysis. We have chosen principal component analysis in order to examine the status of attachment dimensions in relation to basic personality structure. Second goal of this study was to explain dimensions of attachment by identifying particular predictors from the sets formed by modalities of Disintegration and aspects of the Five-factor model traits.

## Method

### Sample

The sample consisted of 203 university-educated respondents from Serbia. The average respondent age was 43.37 years, 58% of participants were females. All the respondents filled out the questionnaires voluntarily.

### Measures

Basic personality structure was assessed with the NEO-PI-R personality inventory (Costa & McCrae, 1992), with metrical characteristic revised in Costa and McCrae (2008). It examines five broad personality domains and their subordinate aspects. The domain of Neuroticism ( $\alpha = .91$ ) is represented by the following aspects: Anxiety, Hostility, Depression, Self-Consciousness, Impulsiveness and Vulnerability. Extraversion ( $\alpha = .80$ ) consists of Warmth, Gregariousness, Assertiveness, Activity, Excitement seeking and Positive emotion. The aspects of Openness ( $\alpha = .80$ ) are Fantasy, Aesthetics, Feelings, Actions, Ideas and Values. The domain of Agreeableness ( $\alpha = .86$ ) consists of Trust, Straightforwardness, Altruism, Compliance, and Tendermindedness. Finally, the domain of Conscientiousness ( $\alpha = .90$ ) is made of Competence, Order, Dutifulness, Self-discipline, Achievement Striving and Deliberation. The instrument consists of 240 items, with 48 items representing each domain and 8 items representing each domain aspect.

Disintegration is measured by the Delta 10 test (Knežević, Opačić, Kutlešić, & Savić, 2005). This instrument measures ten modalities of schizotypal personality traits. The scale's overall reliability is  $\alpha = .97$ , while the reliabilities of the subscales range from  $\alpha = .84$  to  $\alpha = .91$ . The questionnaire contains 82 items. All modalities of Disintegration are operationalized through 8 items, except Somatoform dysregulation that contains 10 items. Validity of Delta 10 is based on the procedure of test construction: items of ten Disintegration modalities have been obtained through the factor analysis of 26 measures of pro-psychotic experiences (Knežević, Opačić, Kutlešić, & Savić, 2005).

Romantic adult attachment is measured by the Experience in Close Relationship Scale (Brennan, Clark, & Shaver, 1998). Some recent data about reliability, validity and factor structure of this inventory can be examined in the article of Wei, Russell, Mallinckrodt, & Vogel

(2007). It examines two attachment dimensions: Avoidance ( $\alpha = .81$ ) and Anxiety ( $\alpha = .88$ ). The questionnaire contains 36 items, with 18 items for each of the dimensions of romantic adult attachment.

Each item in these instruments also contained a 5-point Likert's scale on which the respondents assessed the degree of their agreement, with "1" indicating complete disagreement and "5" indicating complete agreement.

## Procedure

The participants were selected from various institutions and corporative firms from Serbia. Measures were administrated to them in their working place. Researcher was present while the respondents filled the questionnaires. Average time of data gathering was 75 minutes per participant.

## Results

### Exploration of a shared space of Five factor's facets and attachment dimensions

In order to establish whether attachment dimensions represent separate entities in relation to basic personality traits, we have carried out an exploratory principal component analysis. We have extracted each component whose *eigen* value was larger than one, and then we rotated the components orthogonally, using the Varimax algorithm. We have also analyzed orthogonal and oblique structures and established that the differences between them were almost negligible. The same components were loaded by attachment dimensions when the analysis was carried out through both forms of rotation. We have chosen the orthogonal rotation nevertheless, because it produced certain secondary loadings that might be of interest for interpretation and that do not appear in the oblique solution. Thus, we have extracted seven components that explained 62.31% of the variance of original items (6.08, 14.48%; 4.59, 10.95%; 4.55, 10.84%; 3.23, 7.85%; 3.18, 7.58%, 2.40, 5.71% and 2.07, 4.92% are *eigen* values and percentages of explained variance for each rotated component). SCREE test also suggested that seven components should be analyzed. The pattern matrix of these components is demonstrated in Table 1.

Table 1. *The pattern matrix of extracted components rotated using Varimax method.*

|                               | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------------|------|------|------|------|------|------|------|
| Somatoform dysregulation      | .82  |      |      |      |      |      |      |
| Depression                    | .80  |      |      |      |      |      |      |
| Perceptual distortions        | .77  |      |      |      |      |      |      |
| Magical thinking              | .75  |      |      |      |      |      |      |
| Flattened affect              | .74  |      |      |      |      |      |      |
| Mania                         | .74  |      |      |      |      |      |      |
| Paranoia                      | .71  |      |      |      |      |      |      |
| Increased awareness           | .68  |      |      |      |      | .39  |      |
| Social anhedonia              | .60  |      |      |      | -.46 |      |      |
| General executive dysfunction | .59  |      | .46  |      |      |      |      |
| Achievement striving          |      | .81  |      |      |      |      |      |
| Self-discipline               |      | .79  |      |      |      |      |      |
| Competence                    |      | .71  |      |      |      |      |      |
| Dutifulness                   | -.31 | .70  |      |      |      |      |      |
| Order                         |      | .68  |      |      |      |      |      |
| Activity                      |      | .58  |      |      | .33  |      | .31  |
| Deliberation                  |      | .48  | -.32 |      |      |      | -.47 |
| Anxiety                       |      |      | .76  |      |      |      |      |
| Hostility                     |      |      | .76  | -.34 |      |      |      |
| Impulsiveness                 |      |      | .71  |      |      |      | .31  |
| Depression                    | .33  |      | .70  |      |      |      |      |
| Self-Consciousness            |      |      | .69  |      | -.33 |      |      |
| DIMENSION ANXIETY             |      |      | .56  |      |      |      | -.44 |
| Vulnerability                 |      | -.51 | .55  |      |      |      |      |
| Trust                         |      |      |      | .75  |      |      |      |
| Tendermindedness              |      |      |      | .75  |      |      |      |
| Warmth                        |      |      |      | .71  | .37  |      |      |
| Altruism                      |      | .31  |      | .69  |      |      |      |
| Compliance                    |      |      |      | .55  | -.43 |      |      |
| Excitement seeking            |      |      |      |      | .62  |      |      |
| Assertiveness                 |      | .37  |      |      | .59  |      |      |
| Gregariousness                |      |      |      |      | .56  |      |      |
| Modesty                       |      |      |      | .44  | -.52 |      |      |
| Straightforwardness           |      |      |      |      | -.48 |      |      |
| Positive emotion              |      |      |      |      | .46  | .32  |      |
| Esthetics                     |      |      |      |      |      | .67  |      |
| Feelings                      |      |      |      |      |      | .63  |      |
| Ideas                         |      |      |      |      |      | .63  |      |
| DIMENSION AVOIDANCE           | .39  |      |      |      |      | -.48 |      |
| Values                        |      |      |      |      |      |      | .70  |
| Actions                       |      |      |      |      |      |      | .58  |
| Fantasy                       |      |      |      |      |      | .43  | .55  |

Note. Only saturations larger than .30 are shown in the table.

The results demonstrate that attachment dimensions do not form a separate component in relation to those formed by the traits of basic personality structure. The dimension of Anxiety basically behaves as an aspect of the domain of Neuroticism. It rather strongly saturates a component defined most of all by the aspects of Neuroticism (.561). Also, the dimension of Anxiety saturates the negative pole of a component constituted first of all by Values, Actions and Fantasy, and then by the aspects that describe poor impulse control and high activity. The dimension of Avoidance saturates negatively a component defined by the aspects of Openness (Aesthetics, Feelings, Ideas and Fantasy), Positive emotion and Increased awareness. The secondary loading of this dimension belongs to a component that is clearly defined by the modalities of Disintegration, with a low participation of Depression and the opposite pole of the aspect of Dutifulness.

### Prediction of attachment dimensions

Because of numerous predictor variables (thirty aspects of the Five-factor model and ten modalities of Disintegration), identification of the specific traits that contribute most to the prediction was carried out through stepwise backward regression. This procedure starts from the overall set of predictors and then eliminates those that do not contribute to the prediction or do so feebly. The number of significant predictors we have obtained was somewhat bigger than the one we could have obtained if we had analyzed the whole set of variables, because we have eliminated all the predictors that were redundant in the set. The results of this analysis are demonstrated in Tables 2 and 3.

Table 2. *Predictors and their coefficients in prediction of the dimension of Anxiety.*

| Predictors           | <i>r</i> | <i>B</i> | $\beta$ |
|----------------------|----------|----------|---------|
| Increased awareness  | .19**    | -.18     | -.15*   |
| Mania                | .35**    | .35      | .29**   |
| Anxiety              | .51**    | .04      | .21**   |
| Depression           | .55**    | .05      | .24**   |
| Self-Consciousness   | .42**    | .05      | .19*    |
| Assertiveness        | -.13     | .03      | .12     |
| Fantasy              | -.02     | -.03     | -.15*   |
| Esthetics            | -.07     | .02      | .11     |
| Action               | -.22**   | -.04     | -.15*   |
| Modesty              | .00      | -.03     | -.12    |
| Tendermindedness     | .06      | .04      | .15*    |
| Order                | -.05     | .03      | .12     |
| Achievement striving | -.19**   | -.04     | -.17*   |
| Self-discipline      | -.24**   | -.04     | -.16*   |

\*  $p < .05$ . \*\*  $p < .01$ .

The model obtained through prediction of the dimension of Anxiety has the following characteristics:  $R = .698$ ;  $R^2 = .487$ ;  $F = 12.732$ ;  $p < .01$ . The most successful predictor is Mania ( $\beta = .290$ ;  $p < .01$ ). It is followed by the aspects of Neuroticism, Depression ( $\beta = .237$ ;  $p < .01$ ), Anxiety ( $\beta = .207$ ;  $p < .01$ ) and Self-Consciousness ( $\beta = .190$ ;  $p < .05$ ). Feebly expressed domains of the aspect of Conscientiousness also contribute to the understanding of this dimension: Achievement striving ( $\beta = -.171$ ;  $p < .05$ ) and Self-discipline ( $\beta = -.165$ ;  $p < .05$ ). The weakest, yet statistically significant, predictive contributions were made by the feebly expressed Increased awareness ( $\beta = -.146$ ;  $p < .05$ ), Fantasy ( $\beta = -.146$ ;  $p < .05$ ), Action ( $\beta = -.147$ ;  $p < .05$ ), and Tendermindedness ( $\beta = .147$ ;  $p < .05$ ).

Table 3. *Predictors and their coefficients in prediction of the dimension of Avoidance.*

| Predictors          | <i>r</i> | <i>B</i> | $\beta$ |
|---------------------|----------|----------|---------|
| Depression          | .36**    | .37      | .27**   |
| Gregariousness      | .01      | .02      | .12     |
| Positive emotion    | -.34**   | -.04     | -.24**  |
| Feelings            | -.31**   | -.04     | -.20**  |
| Straightforwardness | -.13     | -.02     | -.12    |
| Dutifulness         | -.19**   | .03      | .17*    |
| Deliberation        | -.24**   | -.04     | -.21**  |

\*  $p < .05$ . \*\*  $p < .01$ .

The model obtained by prediction of the dimension of Avoidance has the following characteristics:  $R = .521$ ;  $R^2 = .271$ ;  $F = 10.38$ ;  $p < .01$ . Depression is the personality trait that participates most in the predictor set ( $\beta = .267$ ;  $p < .01$ ), and then come Positive emotion ( $\beta = -.241$ ;  $p < .01$ ), Feelings ( $\beta = -.203$ ;  $p < .01$ ) and Deliberation ( $\beta = -.206$ ;  $p < .01$ ). Finally, the dimension of Avoidance was also significantly predicted by Dutifulness ( $\beta = .175$ ;  $p < .05$ ), as an aspect of Conscientiousness.

## Discussion

This research purported to examine relations between basic personality structure and romantic adult attachment. Previous studies have pointed out that there is a correlation between romantic adult attachment and basic personality structure (Nofle & Shaver, 2006), but that attachment dimensions are not redundant in relation to basic personality structure (Picardi Caroppo, Toni, Bitetti, & Di Maria, 2005); in fact, these two constructs overlap, but attachment cannot be reduced to basic personality structure (Surcinelli, Rossi, Montebanarocci, & Baldaro, 2010).

The results we obtained through principal component analysis demonstrate that attachment dimensions cannot be considered as separate in relation to basic personality structure, i.e. they represent expressions of basic personality traits in interpersonal

relationships (Table 1). Reducing attachment dimensions onto basic personality traits suggests that adult romantic attachment is a construct that belongs to personality space, and that individual differences in romantic attachment are probably generated by the same basic systems that produce stable affective, motivational and behavioral patterns in human personality, which are of most significant importance in adaptation processes (Michalski & Sackelford, 2010; Nettle, 2006). If we consider the adult attachment dimensions as a part of interpersonal processes related to mating (Immerman, 2003), this result would be expected to find. However, data obtained in this study is not congruent with the results of previous studies in this field (although former researches were not conducted with explicit goal to explore this topic), and thus represents a significant contribution to the understanding of these constructs. The latent structure of the examined variables demonstrates that the dimension of Anxiety saturates most the Neuroticism factor and negatively the component made of the facets of Openness. The dimension of Avoidance is dominantly situated on the negative pole of Openness, and then on the component of Disintegration. Past studies of relations between attachment and basic personality structure were primarily based on correlational analyses in which authors pointed out that Neuroticism correlated negatively with both Anxiety and Avoidance, as well as that there were no significant correlations between Openness and attachment dimensions (Nofle & Shaver, 2006). Our results of principal component analysis suggest that negative pole of Openness dimension (inclination for rigid values, reduced introspection, poor fantasy capacities, and absence of reaction to aesthetic stimuli) is very important for understanding attachment dimensions. These findings partially confirm the data obtained by Marušić, Kamenov, & Jelić (2006), regarding associations between Avoidance and Openness. Results shown here surely need to be replicated, but they speak directly against the status of adult attachment as a phenomenon that is different and separate from personality traits (Picardi Caroppo, Toni, Bitetti, & Di Mari, 2005; Surcinelli, Rossi, Montebarducci, & Baldaro, 2010).

Having successfully localized attachment dimensions in personality space, we tried to identify particular predictors of these dimensions and thus contribute to a better understanding of their content. The results of this analysis demonstrate that the dimension of Anxiety is related to depressed affect accompanied by increased activity, restlessness, lack of trust in others, and uneasiness in social interactions (Table 2). Contribution of Depression and Mania to regression function suggests that Anxiety dimension has similar features as bipolar affective disorder does. Past studies have confirmed that the respondents who had been diagnosed with bipolar affective disorder had a high score on the dimension of Anxiety. (Cole-DeFke & Kobak, 1996; Rosenstein & Horovitz, 1996; Morriss, Gucht, Lancaster, & Bentall, 2009). Unlike Anxiety, the dimension of Avoidance describes the affectivity of individuals who often go through depressive moods, have weaker abilities of generating positive emotions or even have a flattened emotional life (Table 3).

As it can be seen, the results of previous analyses offer a clear picture of the nature of attachment dimensions, but they are ambiguous about the nature of their psychological content. Principal component analysis (Table 1) demonstrates that the dimension of Avoidance contains a schizotypal component, while the dimension of Anxiety is mostly neurotic by nature. However, explanation of these dimensions by particular predictors

(Tables 2 and 3) offers a contrary picture: Avoidance is primarily described by depression and lack of positive emotions, while the dimension of Anxiety possesses elements that are similar to bipolar disorder: increased mania and increased depression. How this dilemma is to be resolved? Disintegration represents a heterogeneous set of traits that are seen as being related to psychotic experiences (Knežević, Opačić, Kutlešić, & Savić, 2005). However, some of these traits are better representatives of these experiences (in differential-diagnostic sense), such as perceptual distortions or somatoform dysregulation, than some other modalities of Disintegration (such as depression and/or social anhedonia, which are by their content very close to aspects of Neuroticism or Extraversion). It should first be noted that no distinctive pro-psychotic phenomenon appears as a predictor of attachment dimensions (Tables 2 and 3). When the dimension of Avoidance was entered into analysis as the criterion, the most important predictor was Depression ( $\beta = .267$ ). Although depressive experiences are represented in the Five-factor personality model by the facet of Depression, this particular predictor belongs to the modalities of Disintegration. Therefore, associations between Avoidance and Disintegration are not to be explained by the nature of Avoidance but by the fact that the modality of Disintegration is more successful predictor of this dimension than the facet of Depression from the Five-factor model. The reason for this predictor being more successful in prediction of Avoidance is of psychometric and not substantial nature. This fact explains correlations between Avoidance and Disintegration, but does not allow us to interpret Avoidance as schizotypal by nature, but rather neurotic, as it can be seen in Table 3. On the other hand, the two most important predictors of Anxiety are Mania ( $\beta = .290$ ) and Depression ( $\beta = .237$ ). Although differentially diagnostic symptoms of psychosis were not present here either, this combination of these traits clearly suggests bipolar affective disorder (Akiskal, 2007). On the basis of these results, we nevertheless assume that the dimension of Anxiety contains a schizotypal (moreover, bipolar) component, although on face value it does not seem so. This finding is congruent with earlier findings about correlations between attachment dimensions and Schizotypy (Berry et al., 2007), and especially with those that stress correlations between Schizotypy and the dimension of Anxiety (Tiliopoulos & Goodall, 2009). However, there are some differences between the data obtained in this study and earlier findings. First, it seems that former results about connections between attachment and Schizotypy are focused on interpersonal indicators of pro-psychotic phenomena (Berry, Barrowclough, & Wearden, 2008), highlighting relationships between social anhedonia and attachment Avoidance (Berry et al. 2006; Berry, et al., 2007; Troisi, Alcini, Coviello, Nanni, & Siracusano, 2010). On the other hand, attachment Anxiety was mostly correlated with positive schizotypal symptoms, such as paranoia (Meins, Jones, Fernyhough, Hurndal, & Koronis, 2008) and cognitive dysorganization (Berry et al., 2007). These associations were not confirmed in this study: there were no correlations between attachment dimensions and Disintegration modalities of Social anhedonia, Paranoia and General executive dysfunction. Traits that are saturated with emotional content were the ones that showed most important connections with attachment dimensions in present study. Among them, Depression is the best predictor of both dimensions of attachment (Tables 2 and 3), a finding that has been obtained in some recent studies (Cantazaro & Wei, 2010). A difference in relation to previous findings also is

that data obtained in this study highlight the association between Avoidance and affective dysfunctions of bipolar type: again it is the emotional dysregulation that shows connections with adult attachment. It seems that problems in emotional functioning that scales of DELTA 10 and NEO-PI-R measure (Depression, Mania, Anxiety) are the core of dysfunctions in romantic relationships. Anxiety, as a dimension of attachment, reflects mostly neurotic type of romantic relatedness, reflected in fear of losing the partner and followed with emotions of depression and anxiety (Table 2). Avoidance attachment probably represents more severe problems in romantic bonding that are expressed in psychotic emotional phenomena such as manic-depression pattern (Table 3). Where is the origin of this relationship between attachment and emotional dysfunction? Causal links in cross-sectional designs, like this one, can not be determined. But emotional bond between child and mother can plausibly be assumed to be a common determinant of both adult attachment (Fraley, 2002) and schizotypal experiences, so the longitudinal researches could explore it as a possible source of connection between them.

### Concluding remarks

On the basis of the results obtained in this study, we can conclude that attachment is not separated from basic personality structure but that it represents an expression of the traits of Neuroticism, Disintegration and low Openness in interpersonal relationships of adults. The concept of attachment is to be best understood as an expression of emotional dysregulation (in its subclinical nature) in close interpersonal relationships, and in that sense attachment is a concept whereby one could speak about psychic functioning in the emotional sphere of life. These results by all means open the question of investigation of the concept of adult attachment, its operationalization and the methods of its measurement. Can attachment theory, which has its practical application and is empirically confirmed for the earliest phases of children's development, be applied in the same way to adults as well? Do we measure a concept which is a part of basic personality structure that, in interpersonal relations, becomes its most important and most visible part? If the findings presented in this study happen to be reconfirmed, then adult attachment dimensions could not no longer be seen as separate from personality traits. This would have further implications for investigation of the status of attachment and its relations with personality and would open questions the answers of which would demand a methodology that surpasses correlational designs. Finally, these results implicate that relationships between personality and attachment must be reinvestigated on earlier phases of human development too. Only longitudinal studies which can offer causal explanations could unravel the knot of attachment and personality implied by the results of this study.

### References

- Akiskal, H. S. (2007). The Emergence of the Bipolar Spectrum: Validation along Clinical-Epidemiologic and Familial-Genetic Lines. *Psychopharmacology Bulletin*, 40, 99–115.

- Berry, K., Wearden, A., Barrowclough, C., & Liversidge, T. (2006). Attachment styles, interpersonal relationships and psychotic phenomena in a non-clinical student sample. *Personality and Individual Differences*, 41, 707–718.
- Berry, K., Band, R., Corcoran, R., Barrowclough, C., & Wearden, A. (2007). Attachment styles, earlier interpersonal relationships and schizotypy in a non-clinical sample. *Psychology and Psychotherapy: Theory, Research and Practice*, 80, 563–576.
- Berry, K., Barrowclough, C., & Wearden, A. (2008). Attachment theory: A framework for understanding symptoms and interpersonal relationships in psychosis. *Behaviour Research and Therapy*, 46, 1275–1282.
- Bowlby, J. (1969). *Attachment and loss (vol. 1). Attachment*. New York: Basic Books.
- Bowlby, J. (1988). *A secure base*. New York: Basic Book.
- 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.
- Cantazaro, A., & Wei, M. (2010). Adult Attachment, dependence, self-criticism, and depressive symptoms: A test of a mediational model. *Journal of Personality*, 78, 1135–1162.
- Carver, C. S. (1997). Adult attachment and personality: Converging evidence and a new measure. *Personality and Social Psychology Bulletin*, 23,863–883.
- Claridge, G. (2010). Personality and psychosis. In P. J. Corr, & G. Matthews (Eds.), *The Cambridge handbook of personality psychology* (pp. 631–648). Cambridge, UK: Cambridge University Press.
- Cole-Detke, H., & Kobak, R. (1996). Attachment processes in eating disorder and depression. *Journal of Consulting and Clinical Psychology*, 64, 282–290.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58, 644–663.
- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., & McCrae, R. R. (2008). The revised NEO Personality Inventory (NEO-PI-R). In G. J. Boyle, G. Matthews, D. H. Saklofske (Eds.), *The SAGE handbook of personality theory and assessment: Personality measurement and testing, Vol. 2* (pp. 179–198). London: SAGE Publications Ltd.
- Donnellan, M. B., Burt, S. A., Levenchosky, A. A., & Klump, K. L. (2008). Genes, personality, and attachment in adults: A multivariate behavioral genetic analysis. *Personality and Social Psychology Bulletin*, 34, 3–16.
- Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6, 123–151.
- 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.
- Hazan, C., & Shaver, P. (1988). A biased overview of the study of love. *Journal of Social and Personal Relationships*, 5, 473–510.
- Immerman, R. S. (2003). Perspectives on human attachment (pair bonding): Eve's unique legacy of a canine analogue. *Evolutionary psychology*, 1, 138–154.
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big-Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L.

- A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114–158). New York, NY: Guilford Press.
- Knežević, G., Opačić, G., Kutlešić, V., & Savić, D. (2005). *Preserving psychoticism as a basic personality trait: A proposed reconceptualization* [Abstract]. Proceedings of the 113th Annual Convention. American Psychological Association, Washington. p. 176.
- Kwapil, T. R., Wrobel M. J., & Pope, C. A. (2002). The five-factor personality structure of dissociative experiences. *Personality and Individual Differences*, 32, 431–443.
- Marušić, I., Kamenov, Ž., & Jelić, M. (2006). Personality and attachment to romantic partners. *Review of Psychology*, 13, 9–18.
- Meins, E., Jones, S. R., Fernyhough, C., Hurndal, S., & Koronis, P. (2008). Attachment dimensions and schizotypy in a non-clinical sample. *Personality and Individual Differences*, 44, 1000–1011.
- Michalski, R. L., & Shackelford, T. K. (2010). Evolutionary personality psychology: Reconciling human nature and individual differences. *Personality and Individual Differences*, 48, 509–516.
- Morriss, R. K., Van der Gucht, E., Lancaster, G., & Bentall, R. P. (2009). Adult attachment in bipolar disorder. *Psychology & Psychotherapy: Theory, Research & Practice*, 82, 267–277.
- Nettle, D. (2006). The Evolution of Personality Variation in Humans and Other Animals. *American Psychologist*, 61, 622–631.
- Noftle, E. E., & Shaver, P. R. (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.
- 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.
- Pickering, L., Simpson, J., & Bentall, R. P. (2008). Insecure attachment predicts proneness to paranoia but not hallucinations. *Personality and Individual Differences*, 44, 1212–1224.
- Rosenstein, D. S., & Horowitz, H. A. (1996). Adolescent attachment and psychopathology. *Journal of Consulting and Clinical Psychology*, 64, 244–253.
- Ross, S. R., Lutz, C. J., & Bailey, S. E. (2002). Positive and negative symptoms of schizotypy and the Five Factor Model: A domain and facet level analysis. *Journal of Personality Assessment*, 79, 53–72.
- Surcinelli, P., Rossi, N., Montebanarocci, O., & Baldaro, B. (2010). Adult attachment styles and psychological disease: examining the mediating role of personality traits. *The Journal of Psychology: Interdisciplinary and Applied*, 144, 523–534.
- Tiliopoulos, N. & Goodall, K. (2008). The neglected link between adult attachment and schizotypal personality traits. *Personality and Individual Difference*, 47, 299–304.
- Troisi, A., Alcini, S., Coviello, M., Nanni, R. C., & Siracusano, A. (2010). Adult attachment style and social anhedonia in healthy volunteers. *Personality and Individual Differences*, 48, 640–643.
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. (2007). The experiences in Close Relationship Scale (ECR)-Short Form: Reliability, Validity, and Factor Structure. *Journal of Personality Assessment*, 88, 187–204.

Prispelo/Received: 03.08.2011

Spregeto/Accepted: 07.11.2011