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THE INVENTORY OF PARENT AND PEER ATTACHMENT (IPPA): A STUDY ON THE VALIDITY OF STYLES OF ADOLESCENT ATTACHMENT TO PARENTS AND PEERS IN AN ITALIAN SAMPLE

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The aims of the present study were to provide a contribution to the validation of the three versions of the *Inventory of Parent and Peer Attachment* (IPPA) (Armsden & Greenberg, 1989) relative to mother, father, and peers, and to verify the validity of the attachment style classifications suggested by Armsden and Greenberg (1987) and Vivona (2000). The IPPA measures adolescent parent and peer attachment styles by assessing the following three dimensions: Trust, Communication, and Alienation. The sample was composed of 1183 adolescents (606 males and 577 females) living in central Italy. Confirmatory factor analyses supported the three-factor structure in both parent and peer IPPA versions. The internal consistency coefficients (ρ) of the three IPPA subscales were satisfactory for each version. Further, the present study provided support for both parent and peer attachment style classifications devised by Armsden and Greenberg (1987) and Vivona (2000), also within the Italian context.

Key words: Parent attachment; Peer attachment; Attachment style classification; Italian adolescents; Self-report measure.

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INTRODUCTION[1]

Since its origins, attachment research has focused primarily on the study of attachment bonds in early childhood (Bowlby, 1969/1982). Lately, however, attachment has been reconceptualized to include other significant relationships, such as those with peers. Recent studies in this area have revealed an increasing interest in extending the investigation on attachment beyond early childhood through to adolescence, and particularly in investigating in greater depth the study of adolescents' representations of their actual attachment relationships (see Allen & Land, 1999).

From an attachment perspective, adolescence is marked by critical changes in cognitive, behavioral, and emotional systems. Adolescents develop their own points of view and separate them from their parents' (Bowlby, 1969/1982). Further, the transition to adolescence implies a modification in the family balance between connectedness and autonomy. Indeed, during this developmental phase, adolescents search greater independence and autonomy from their parents. Yet, this does not imply a disruption of attachment relationships with parents: adolescent autonomy is established not to the detriment of family attachment bonds but in the context of secure, close, and lasting relationships with parents (Allen, Hauser, Bell, & O'Connor, 1994; Fraley &

Davis, 1997). In other words, adolescents can engage in exploratory behaviors independently from their parents because they know that parents are available attachment figures to whom they can look for support in case of real need (Allen, Hauser, Eickholt, Bell, & O'Connor, 1994).

Furthermore, based on attachment theory, it has been suggested that early parent-child relationships serve as prototypes (Waters & Treboux, 1995), laying the foundation for later close relationships (Furman, Simon, Shaffer, & Bouchey, 2002; Grossman, Grossman, & Waters, 2005; Waters, Treboux, Crowell, & Albershem, 2000). Specifically, attachment theory states that, based on experiences with their caregivers, children develop internal working models of the self and of their caregivers, which are relatively stable mental representations and operate outside consciousness (Bowlby, 1969/1982; Bretherton & Munholland, 1999). According to Bowlby (1973) such experience-based models, which are sets of rules and expectations for organizing information relevant to attachment, play a fundamental role in affecting the creation and nature of subsequent social relationships. These models influence information processing as well as emotional and behavioral regulation (Zimmermann, 1999), by guiding cognition, memory, attention, and behavior in relationships with parents (Main, Kaplan, & Cassidy, 1985). Further, they shape and influence representations of future relationships (Bowlby, 1973). There is, in fact, substantial evidence that parent-child attachment is related to peer attachment (Elicker, Englund, & Sroufe, 1992; Furman et al., 2002; Nada Raja, McGee, & Stanton, 1992).

Particularly during adolescence, when interactions with peers take on an increasingly higher priority, attachment behavior is also often directed toward non-parental figures (Kerns, Tomich, & Kim, 2006). Close friends are perceived as primary sources of guidance and support. Furthermore, intimacy, mutuality, and self-disclosure to friends peak during adolescence (Berndt, 2002; Collins & Laursen, 2000). Adolescents, therefore, evolve from being receivers of care from both their parents to becoming potential caregivers for significant others (Allen & Land, 1999). Thus, peer relationships can be considered to be a type of attachment relationship.

From a theoretical viewpoint, given the significance of attachment in adolescence, it is important to analyse similarities and differences between the typical attachment styles of adolescent parent and peer relationships.

From a methodological point of view, there is a need for reliable measures to study parent and peer attachment in this developmental phase.

Consequently, different methods have been developed to measure attachment, which have emphasized different assessments using language and perceptions, such as interviews and self-report questionnaires. Interviews can measure a person's state of mind with respect to attachment (Main et al., 1985) and overcome individual defences, detecting internal working models through narratives, which aim to reveal unaware attachment representations; conversely, self-report measures assess conscious cognitions, feelings, and perceptions related to attachment relationships. Self-reports have the advantage of being economical and easy to administer, an especially valuable aspect in large research projects (see, for a review, Crowell & Treboux, 1995). Further, the use of a self-report measure is particularly appropriate for adolescents, because it allows the identification of perceptions providing unique information about their expectations, given the history of their attachment relationships. Respondents' perceptions of the quality of their relationships significantly influence their attitude and behavior in relation to their social partners and, consequently, the quality of their interactions (Furman, 1996; Furman & Buhrmester, 1992). Moreover, as some researchers have suggested, subjective evaluations of relationships may have a stronger impact on individ-

ual adjustment than objective indices (Cunningham & Barbee, 2000; Furman, 1996). Finally, self-report measures have the advantage of assessing the fundamental aspects of the subjective experience, while ensuring the respondent's privacy (Bonino, 2004).

At present, among self-report scales for the study of attachment, the only one specific for adolescence, and simultaneously measuring adolescents' attachment to parents and peers, is the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987, 1989).

THE INVENTORY OF PARENT AND PEER ATTACHMENT (IPPA)

The IPPA is a self-report scale that measures adolescents' perceptions of their attachment to their parents and peers. The first version of this instrument was developed by Greenberg and colleagues (Greenberg, Seigel, & Leich, 1984) for adolescents from 12 to 19 years old. Based on Bowlby's attachment theory, the authors developed two unidimensional scales to assess the behavioral and affective/cognitive aspects of attachment to parents and peers. However, although the IPPA scores were correlated with self-esteem and life satisfaction, the unifactorial nature of the scale renders it inappropriate to assess the attachment construct.

For this reason, a few years later Armsden and Greenberg (1987) worked on the scale in order to develop a multidimensional measure. Particularly, the authors hypothesized that "the internal working model of attachment figures may be tapped by assessing 1) the positive affective/cognitive experience of trust in the accessibility and responsiveness of attachment figures, and 2) the negative affective/cognitive experiences of anger and/or hopelessness resulting from unresponsive or inconsistently responsive attachment figures" (Armsden & Greenberg, 1987, p. 431). Starting from these considerations, using a sample of 16-to-20-year-olds, Armsden and Greenberg developed two parallel versions of the IPPA. The parent version contained 28 items and the peer version contained 25. The items measure both a global score of security attachment and three dimensions of the attachment relationship: 1) *Trust*, which refers to the adolescents' trust that parents and peers understand and respect their needs and desires; 2) *Communication*, which refers to adolescents' perceptions that parents and peers are sensitive and responsive to their emotional states and assessing the extent and quality of involvement and verbal communication with them; and 3) *Alienation*, which refers to adolescents' feelings of isolation, anger, and detachment experienced in attachment relationships with parents and peers.

From a psychometric point of view, the three dimensions of the IPPA showed good reliability indices. Indeed, the Cronbach's alpha for the subscales was shown to range from .72 to .92 and test-retest reliability was .93 for parent attachment and .86 for peer attachment. Moreover, the dimensions presented high intercorrelations, with the *r* value ranging from .70 to .76 for the parent version, and .40 to .76 for the peer version. Finally, the IPPA scores were significantly correlated with well-being scores, such as self-esteem and life satisfaction, and also predicted depression/anxiety and resentment/alienation levels in adolescents (Armsden & Greenberg, 1987).

Based on previous research (Lamb, 1977; Main & Weston, 1981), which had shown the differential quality of attachment toward mothers and fathers, Armsden and Greenberg (1989) subsequently developed three parallel versions of the IPPA, splitting the parent version in two forms: one for the mother and one for the father. The authors removed three items from each version because their reformulation was hardly differentiable for mother and father. The three final,

modified, versions consist of 25 items each. Response choices for the items were rated on a 5-point Likert scale from 1 (*almost never or never*) to 5 (*almost always or always*).

Moreover, Armsden and Greenberg (1987) provided a set of rules for classifying parental and peer attachment styles. According to Armsden and Greenberg's (1987) classification criteria, individuals were assigned to the high security group (secure attachment) and to the low security group (insecure attachment) on the basis of their scores on the three IPPA subscales. In other words, individuals who reported their close relationships as marked by high Trust and Communication and low Alienation scores were classified as high security individuals, while those who described their parent and peer relationships as characterized by low Trust and Communication and high Alienation scores were classed as low security individuals. Although such exploratory categorization efficiently distinguished individuals with secure or insecure parent and peer attachments during adolescence (Armsden & Greenberg, 1987; Rice, FitzGerald, Whaley, & Gibbs, 1995), it did not distinguish among different types of insecure attachment.

Vivona (2000) recently suggested a modified attachment style classification for parent attachment, which allows discrimination between the insecure style in avoidant and ambivalent attachment styles. Specifically, individuals who describe their attachment relationships as characterized by higher scores on Alienation than on Trust and Communication were classified as avoidant individuals, whereas those who reported their relationships as marked by lower scores on Trust than on Communication or Alienation were classified as ambivalent individuals. This modified classification also clearly distinguished individuals with secure or insecure (avoidant and ambivalent) parent attachments (Vivona, 2000).

Overall, the IPPA conceptual structure, psychometric characteristics, agility, and easy administration procedure make it a particularly useful and valuable measure for psychological research in adolescence. Respondents' ratings provide a common metric which enables comparison of different types of attachment relationships. Employing this scale would therefore assist in the systematic testing and comparison of differences and similarities between these diverse types of attachment relationships.

Regarding the Italian context, different adaptations of the IPPA have been developed, both for the original multidimensional version (Baiocco, Laghi, & Paola, 2009) and for the modified multidimensional one (San Martini, Zavattini, & Ronconi, 2009). However, both these adaptations only verified the IPPA dimensionality and it is not yet known whether it is possible to use the IPPA to classify individual differences in attachment organization through diverse typologies.

Given these considerations, the present study aimed to further contribute to the validation of the IPPA (Armsden & Greenberg, 1989) in the Italian context. More specifically, we aimed to firstly confirm the validity and reliability of the IPPA factorial structure (Study 1). Subsequently, we intended to provide evidence for the validity of the IPPA classifications by analyzing its relationship to measures of the quality of parent and peer relationships and of psychological well-being (Study 2).

STUDY 1

The purpose of the first study was to contribute further to the Italian validation of the modified multidimensional versions of the IPPA (Armsden & Greenberg, 1989) by verifying: 1)

the factorial structure of the three versions relative to the relationships with mother, father, and peers, via confirmatory factor analysis; and 2) the reliability of the scales.

METHOD

Participants

A total of 399 Italian adolescents (199 males and 200 females) were recruited for the study. Their age ranged from 12 to 20 years (M = 16.44, SD = 3.02). Participants were attending junior high schools and high schools randomly selected from all public schools in the metropolitan area of Florence.

Procedure

Formal consent from parents and educational authorities was obtained prior to starting data collection. After adolescents had agreed to participate in the study, they were asked to anonymously complete the Italian adaptation of modified multidimensional versions of the IPPA (Armsden & Greenberg, 1989), developed by San Martini et al. (2009), in the classroom during ordinary school hours.

RESULTS

Preliminary Analyses

Before examining the data, we conducted a preliminary analysis designed to test the normality of all IPPA items for the three versions of the scale (Fox, 2008). Analyses revealed a non-normal distribution for some items, which showed asymmetry and a kurtosis greater than ± 1 each of the three versions (Marcoulides & Hershberger, 1997; Muthén & Kaplan, 1985). For this reason, subsequent analyses were conducted using the robust method (Maximum Likelihood Estimates, MLM; Muthén & Muthén, 1998/2007), and MPLUS v. 5.21 statistical program.

Confirmatory Factor Analyses

The factor structure of the scales in relation to the mother, father and peer version was tested via confirmatory factor analysis (Jöresborg & Sörbom, 1993). The model adequacy was evaluated using χ^2. However, because this index is influenced by the sample size (Bollen, 1989; Corbetta, 1993; Primi, 2002), we also considered the Comparative Fit Index (CFI; Bentler, 1990); Tucker and Lewis Index (TLI; Tucker & Lewis, 1973); Root Mean Square Error of Approxima-

tion (RMSE; Steiger & Lind, 1980); and the Standardized Root Mean Square Residual (SRMR; Bentler, 1995).

The IPPA models for mother, father, and peer are shown in Figure 1.

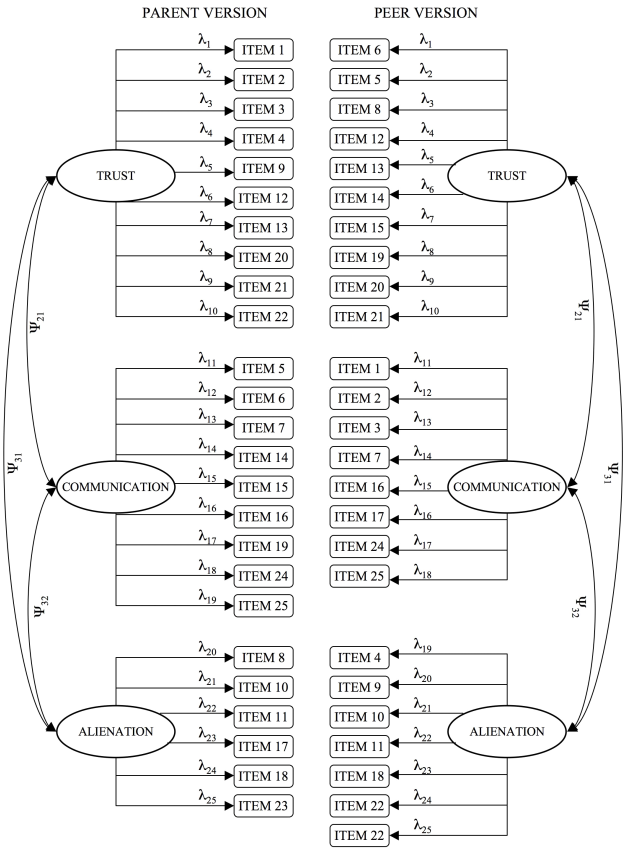

FIGURE 1
Factor structure of parent and peer IPPA versions.

Analyses conducted on the three versions of the IPPA showed unsatisfactory fit indices. In fact, in each version no significant loadings emerged for item 10 ("I get upset easily when there is something that relates to my mother/father") for mother or father versions, nor for item 9 ("I feel the need to be in touch with my friends more often") for the peer version. We therefore proceeded to remove these items and to repeat the analyses on the modified versions. Confirmatory factor analyses conducted on the models including 24 observed variables and three latent variables, showed satisfactory fit indices, confirming the adequacy of the tested structure in relation to mother, father, and peer. The fit indices of the three versions were as follows: mother, $\chi^2 = 471.66$; $\chi^2/df = 1.91$; CFI = .91; TLI = .90; RMSEA = .05; SRMR = .05; father, $\chi^2 = 579.54$; $\chi^2/df = 2.35$; CFI = .91; TLI = .90; RMSEA = .06; SRMR = .05; and peer, $\chi^2 = 514.45$; $\chi^2/df = 2.08$; CFI = .92; TLI = .91; RMSEA = .05; SRMR = .05.

Furthermore, the analysis carried out on these models revealed significant loadings ($p < .001$) for all the 24 items of the scale in relation to each of the three IPPA versions (see Table 1).

TABLE 1
Factor loadings for the three IPPA versions

Item	Mother			Father			Item	Peer		
	Trust	Communication	Alienation	Trust	Communication	Alienation		Trust	Communication	Alienation
1	.69			.71			**5**	.58		
2	.54			.73			**6**	.73		
3	.41			.57			**8**	.56		
4	.58			.58			**12**	.63		
9	.31			.36			**13**	.76		
12	.63			.67			**14**	.73		
13	.62			.57			**15**	.69		
20	.77			.82			**19**	.72		
21	.69			.77			**20**	.75		
22	.67			.62			**21**	.70		
5		.62			.65		**1**		.65	
6		.31			.37		**2**		.72	
7		.49			.78		**3**		.65	
14		.31			.32		**7**		.64	
15		.71			.85		**16**		.68	
16		.78			.85		**17**		.69	
19		.80			.84		**24**		.69	
24		.73			.76		**25**		.70	
25		.57			.70		**4**			.51
8			.33			.47	**10**			.51
11			.31			.55	**11**			.40
17			.52			67	**18**			.51
18			.49			.64	**22**			.45
23			.61			.51	**23**			.53

Finally, for each of the three tested versions, the correlations among the three dimensions indicated a significant positive relationship ($p < .001$) between the Trust and Communication subscales, and a significant negative relationship between these two dimensions and the Alienation one ($p < .001$). More specifically, across the three versions, r between Trust and Communication dimensions ranged from .82 to .88; from –.77 to –.81 for Trust and Alienation; and from –.65 to –.73 for Communication and Alienation.

Internal Consistency

The internal consistency of the three dimensions of each version was assessed using factor loadings and error terms, obtained from confirmatory factor analyses, through the rho index (Bagozzi, 1994). Rho ranged from .85 to .90 for Trust, from .83 to .89 for Communication, and from .62 to .71 for Alienation.

DISCUSSION

On the whole, the Italian version of the IPPA showed satisfactory psychometric properties and adequate reliability for all three versions. Thus, our results have replicated the multidimensional three-factor structure suggested by the authors (Armsden & Greenberg, 1989). However, our analyses have involved the elimination from each version of one item, the loadings of which were not significant. The poor goodness of fit of these items probably depends on their contents, which do not accurately discriminate between the lack of and the need for closeness. Nonetheless, in spite of the elimination of one item per version, the remaining items still accurately measure the level of anger and alienation in parent and peer attachment relationships.

Finally, our data show that all three versions of the IPPA considered have good internal consistency. The IPPA, therefore, appears to be an accurate and reliable measure for the assessment of parent and peer attachment in the Italian context as well.

STUDY 2

The aim of the second study was to assess the validity of the IPPA attachment style classifications by analyzing the strength of their relations to theoretically relevant measures, such as tests of parent and peer relationship quality and psychological well-being.

A central issue in attachment theory is the influence of attachment styles on individual psychological adjustment. In relation to this, a large body of studies has provided evidence for the connection between parental and peer attachment and an individual's adjustment in adolescence (Allen et al., 2002; Laible, Carlo, & Raffaelli, 2000; Vivona, 2000).

First, attachment has been linked to aspects of social competence, such as social support seeking (Simons, Paternite, & Shore, 2001), social adjustment and social self-efficacy (Rice, Cunningham, & Young, 1997), and parent and peer relationship quality (Allen et al., 2003; Zimmermann, 2004). Specifically, research supported the idea that a secure attachment relationship with parents and peers is associated with more social and emotional competence than an insecure attachment relationship (Laible, 2007).

Further, research suggested that secure attachments with parents and peers are linked to positive representations of the self, which include high levels of self-esteem and self-efficacy (Arbona & Power, 2003; Laible, Carlo, & Roesch, 2004; Wilkinson, 2004). However, research on insecurely attached individuals produced contradictory findings. While some researchers found that avoidant individuals report higher self-esteem than ambivalent individuals (Brennan & Bosson, 1998; Brennan & Morris, 1997), Feeney and Noller (1990) found no differences in self-esteem between individuals with ambivalent and avoidant attachment styles.

Internalizing and externalizing behavior problems may also result from attachment organization (Buist, Dekovic, Meeus, & van Aken, 2004; Muris, Meesters, van Melick, & Zwambag, 2001). However, studies on insecurely attached adolescents yielded contradictory findings. In some studies, ambivalent attachments in adolescents were more strongly linked to internalizing disorders than were other types of insecurity (Kobak, Sudler & Gamble, 1991; Rosenstein & Horowitz, 1996). However, according to other studies (Heiss, Berman, & Sperling, 1996; Nelis &

Rae, 2009; Vivona, 2000), internalizing behavior problems, such as anxiety and depression, were not related to insecure attachment. On the other hand, avoidant attachments were more strongly linked to conduct disorders than ambivalent attachments (Rosenstein & Horowitz, 1996).

Furthermore, research highlighted that attachment to parents and peers may influence individual differences in adolescent life satisfaction (Ma & Huebner, 2008; Nickerson & Nagle, 2004). More specifically, studies showed that secure attachment predicts greater life satisfaction (Bradford & Lyddon, 1993).

There is, therefore, substantial evidence for the critical role that attachment organization has in a wide variety of aspects of adolescent psychosocial adjustment.

Given these considerations, Study 2 aimed to provide evidence for the validity of both Armsden and Greenberg's (1987) and Vivona's (2000) attachment style classifications, by analyzing their link to some theoretically relevant variables. These are: 1) quality of relationship with parents (care, encouragement toward autonomy, and overprotection) and peers (social support and negative interactions); and 2) individual well-being (internalizing and externalizing behavior problems, self-esteem, and life satisfaction).

In line with findings from studies in the literature, the following hypotheses were formulated. First, concerning Armsden and Greenberg's attachment style classification, securely and insecurely attached adolescents should differ in all the measures employed. In particular, we expected that secure adolescents would perceive their relationships with parents and peers as being characterized by a higher global quality, and that these adolescents would show greater psychological well-being than insecurely attached youth.

With regard to Vivona's attachment style classification, we hypothesized that insecure attachment would be characterized by lower quality parental bonding and peer relationships than secure attachment. More specifically, avoidant participants were expected to perceive lower parental care and peer social support than ambivalent participants. Finally, given the scarcity and contradictory findings on the role of insecure attachment styles in individual psychosocial adjustment, no specific hypothesis was formulated.

METHOD

Participants and Procedure

The overall sample consisted of 784 Italian adolescents (407 males and 377 females) aged from 12 to 19 years (M = 15.07; SD = 2.71). Participants were recruited from the 1st to the 3rd grade of junior high schools and from the 1st to the 5th grade of high schools from the metropolitan area of Florence. All participants lived in intact families and came from upper-middle socioeconomic classes. In accordance with the American Psychological Association's guidelines for the ethical treatment of human participants, prior permission to participate was obtained from the educational authorities and the adolescents' parents. Participants provided their individual consent and could withdraw at any time. Data were collected anonymously at school during class time. All participants reported on their relationships with their mothers, fathers, and peers simultaneously.

Measures

Attachment

The IPPA described in Study 1 was administered. In accordance with Armsden and Greenberg's (1987) directions for use of the scale, the score distribution of each IPPA subscale (Trust, Communication, and Alienation) was divided into the lowest, middle, and highest third and a rating of "low", "medium", or "high" was assigned for each subscale. The high security (secure style) classification was given to participants who reported at least medium Trust or Communication and low or medium Alienation. Given the theoretical importance of trust in the attachment figure (Bowlby, 1969/1982), the secure style was not assigned if both Trust and Alienation were only medium. The low security (insecure style) classification was assigned if Trust and Communication scores were both low, and Alienation scores were medium or high, or if Trust was medium but Communication was low (or vice versa) and Alienation was high.

Consistent with Vivona (2000), a secure style classification was assigned in line with Armsden and Greenberg's classification rules. The avoidant style was assigned if Trust and Communication scores were both low and the Alienation score was at least medium, or if the Communication score was low, the Trust score was medium, and the Alienation score was high. The avoidant style was not assigned if the Communication score was higher than the Trust score. Lastly, individuals were assigned to the ambivalent style if Communication and Alienation scores were at least medium, the Communication score was higher than the Trust score, and the Alienation score was not lower than the Trust score.

Relationship Quality

Parent relationship quality. The Italian version (Bonaiuto, Perucchini, & Pierro, 1997) of the Parental Bonding Instrument (PBI) developed by Parker, Tupling, and Brown (1979) was used to measure an individual's perceptions of his or her parents' parenting style. This scale consisted of two parallel versions one for each parent. Each version comprised 21 items assessing the following three dimensions: (1) Care, (2) Encouragement toward autonomy, and (3) Overprotection. Participants were requested to respond to each item on a 4-point scale ranging from *very like* (0) to *very unlike* (3). Internal consistency coefficients (Cronbach's alpha) for both mother and father were .90 for Care, .81 and .76 for Encouragement toward autonomy for mother and father, respectively, and .62 (mother) and .61 (father) for Overprotection.

Peer relationship quality. The Italian adaptation (Guarnieri & Tani, 2010) of the *Network of Relationships Inventory (NRI*), developed by Furman and Buhrmester (1985), was administered to assess the quality of relationships with peers. The NRI measured 11 dimensions, which are grouped under two macro-dimensions, namely: Social Support (companionship, instrumental aid, satisfaction, intimacy, nurturance, affection, admiration, and reliable alliance) and Negative Interaction (conflict, punishment, and antagonism). The participants indicated how strongly each quality was experienced in the relationship with their close friends on a 5-point scale (ranging from 1 = *little or none* up to 5 = *the most*). Internal consistency coefficients (Rho) for Social Support and Negative Interaction with close friends were .94 and .89, respectively.

Well-Being

Internalizing and externalizing behavior problems. The Italian version (Pastorelli et al., 2002) of the Youth Self Report (YSR) developed by Achenbach (1991) was administered in order to measure behavioral and emotional problems. The YSR assessed five syndrome scales, grouped in two broadband scales labeled as Internalizing scale (Withdrawn, Somatic Complaints, and Anxious/depressed scales) and Externalizing scale (Delinquent and Aggressive Behavior scales). Each item was rated on a 3-point scale ranging from *not true* (0) to *very true or often true* (2). Internal consistency coefficients (Cronbach's alpha) for the Internalizing and Externalizing scales were .87 and .86, respectively.

Self-esteem. The Italian version (Prezza, Trombaccia, & Armento, 1997) of the *Rosenberg Self-esteem Scale* (RSE) developed by Rosenberg (1965) was used to measure global self-esteem. The RSE consisted of 10 items, which were measured on a 4-point scale ranging from *strongly disagree* (1) to *strongly agree* (4). The internal consistency coefficient (Cronbach's alpha) was .82 for this sample.

Life satisfaction. The Italian adaptation (Di Fabio & Busoni, 2009) of the *Satisfaction with Life Scale* (SWLS) developed by Diener and colleagues (Diener, Emmons, Larsen, & Griffin, 1985) was employed to assess global life satisfaction. The SWLS comprised five items. Respondents were asked to give their answers on a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). The internal consistency coefficient (Cronbach's alpha) was .84 for this sample.

Data Analyses

First, gender differences in the IPPA subscale scores were analyzed via multivariate analyses of variance (MANOVAs), with gender as a fixed factor, separately for the mother, father, and peer versions. Following this, in order to examine attachment style differences in the PBI, NRI, YSP, RSE, and SWLS scores, a separate set of MANOVAs for the mother, father, and peer IPPA versions was carried out with attachment styles and gender as fixed factors. Finally, discriminant function analyses of the PBI, NRI, YSP, RSE, and SWLS scores were conducted, separately for mother, father, and peers, to identify the variable combination, that predicted attachment organization.

RESULTS

Preliminary Analyses

Table 2 illustrates the descriptive statistics for the three IPPA subscales in the sample, separately for the mother, father, and peer versions.

The multivariate analyses of variance (MANOVAs) showed significant gender differences between the IPPA subscale scores with regard to all the three versions: mother, $F(3, 780)$

= 21.7, $p < .001$, $\eta^2 = .08$; father, $F(3, 780) = 12.13$, $p < .001$, $\eta^2 = .05$; peer, $F(3, 780) = 23.99$, $p < .001$, $\eta^2 = .10$. In particular, with reference to the mother version, the univariate analyses of variance (ANOVAs) revealed significant differences in two subscales: Communication, $F(1, 782) = 20.8$, $p < .001$, $\eta^2 = .03$, and Alienation, $F(1, 782) = 7.97$, $p < .005$, $\eta^2 = .01$. Conversely, there were no significant differences in Trust, $F < 1$. Concerning the father version, results showed significant gender differences only for Alienation, $F(1, 782) = 31.74$, $p < .001$, $\eta^2 = .04$. There were no significant differences for Trust, $F(1, 782) = 2.74$, *ns*, and Communication, $F(1, 782) = 2.01$, *ns*. Finally, as regards the peer version, data analysis showed significant differences in Trust, $F(1, 782) = 24.64$, $p < .001$, $\eta^2 = .04$, and Communication, $F(1, 782) = 63.47$, $p < .001$, $\eta^2 = .09$. On the contrary, there were no substantial differences in Alienation, $F(1, 782) = 1.71$, *ns*. Due to these significant gender diversities in some IPPA subscales, a different set of cut-off points were employed for men and women in order to assign an attachment style to them.

TABLE 2
Mean, standard deviation, skew, and kurtosis of Trust, Communication, and Alienation subscales for mother, father, and peer versions

	Male				Female			
	M	*SD*	Skew	Kurtosis	*M*	*SD*	Skew	Kurtosis
				Mother version				
Trust	41.11	5.85	–.91	.93	40.80	7.04	–.92	.90
Communication	30.60	6.55	–.30	–.45	32.86	7.32	–.53	–.28
Alienation	13.79	3.79	.39	–.12	14.58	4.09	.29	–.32
				Father version				
Trust	40.28	7.02	–.92	.97	39.38	8.20	–.90	.89
Communication	29.84	7.47	–.37	–.04	29.03	8.63	–.16	–.71
Alienation	14.12	4.06	.42	.17	15.82	4.40	.31	.07
				Peer version				
Trust	41.59	6.19	–.66	–.28	44.02	5.92	–.92	.98
Communication	29.79	5.85	–.28	–.39	33.27	5.04	–.89	.75
Alienation	14.94	4.49	.56	–.26	14.49	3.95	–.69	.49

Armsden and Greenberg's (1987) Classification

Using Armsden and Greenberg's (1987) classification rules, we were able to determine the attachment style for 470 individuals (59.9%) with regard to the mother version, for 484 individuals (61.7%) in relation to the father version, and for 474 individuals (60.5%) for the peer version. The compositions by gender of the mother, father, and peer attachment style are shown in Table 3.

TABLE 3
Frequency and percentage of males and females for each attachment styles – Armsden and Greenberg's classification

	Secure style		Insecure style		Not categorized	
			Mother version			
	F	%	*F*	%	*F*	%
Males	125	30.7	107	26.3	175	43.0
Females	138	36.6	100	26.5	139	36.9
Total	263	33.5	207	26.4	314	40.1
			Father version			
Males	147	36.1	89	11.1	141	34.6
Females	132	35.0	116	30.8	129	34.2
Total	279	35.6	205	26.1	300	38.3
			Peer version			
Males	116	28.5	100	24.6	191	46.9
Females	153	40.6	105	27.9	119	31.5
Total	269	34.3	205	26.1	310	39.5

Descriptive statistics for the PBI, NRI, YSR, RSE, and SWLS scores are reported, separately for parents and peers, in Table 4.

For mother attachment style and gender, the two multivariate analyses of variance (MANOVAs), one relative to the three PBI scales and the other to the two YSR scales, the RSE scale, and the SWLS scale, showed significant multivariate effects for attachment style: PBI, $F(3, 464) = 202.39$, $p < .001$, $\eta^2 = .57$; YRS, RSE, SWLS, $F(4, 461) = 53.47$, $p < .001$, $\eta^2 = .32$, and gender: PBI, $F(3, 464) = 3.05$, $p < .05$, $\eta^2 = .02$; YRS, RSE, SWLS, $F(4, 461) = 18.43$, $p < .001$, $\eta^2 = .14$, but not for gender by attachment style: PBI, $F(3, 464) = 2.02$, *ns*; YRS, RSE, SWLS, $F(4, 461) = 1.2$, *ns*. Similar results were obtained for father attachment. Multivariate main effects were found for attachment style: PBI, $F(3, 478) = 251.68$, $p < .001$, $\eta^2 = .61$; YRS, RSE, SWLS, $F(4, 476) = 47.07$, $p < .001$, $\eta^2 = .28$. Multivariate main effects were found for gender: PBI, $F(3, 478) = 5.04$, $p < .01$, $\eta^2 = .03$; YRS, RSE, SWLS, $F(4, 476) = 16.07$, $p < .001$, $\eta^2 = .12$. However, the gender by attachment style interaction was nonsignificant: PBI, $F < 1$; YRS, RSE, SWLS, $F < 1$.

The ANOVA results for the mother and father are presented in Table 4. Findings revealed that the secure group perceived greater care and encouragement toward autonomy and less overprotection from both parents than the insecure group. Moreover, the secure group reported less internalizing and externalizing disorders and higher self-esteem and life satisfaction than the insecure group. Regarding gender differences, females perceived lower levels of encouragement toward autonomy from both mother and father, and higher overprotection from their father than their male counterparts. Further, females showed a higher level of internalizing disorders and lower levels of externalizing disorders than males. Finally, males reported higher self-esteem and life satisfaction than females.

TABLE 4
Means and standard deviations of dependent variables, according to attachment style and gender – Armsden and Greenberg's classification

	Secure						Insecure						ANOVA			
	Male		Female		Total		Male		Female		Total		Group		Gender	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	η2	*F*	η2
Mother																
PBI Care	40.38	3.22	41.49	2.41	40.96	2.87	31.46	5.01	30.46	6.88	30.98	5.99	568.4***	.55	*ns*	
PBI Autonomy	18.60	3.41	18.64	3.26	18.62	3.33	17.37	3.37	15.91	4.45	16.66	3.99	34.77***	.07	4.51*	.01
PBI Overprotection	5.80	1.80	5.85	1.68	5.83	1.73	8.22	2.48	8.79	2.72	8.49	2.61	177.96***	.28	*ns*	
YSR Internalizing	10.15	7.30	13.50	8.14	11.91	7.92	13.53	8.19	19.04	8.95	16.19	8.98	34.77***	.07	34.26***	.07
YSR Externalizing	9.62	6.16	7.69	5.51	8.61	5.89	15.39	8.18	12.76	5.95	14.12	7.30	81.06***	.15	14.36***	.03
RSE Self-esteem	22.50	4.80	20.65	4.35	21.53	4.66	18.90	5.15	17.17	4.83	18.07	5.06	63.61***	.12	16.28***	.03
SWLS Life satisfaction	28.30	5.03	27.01	5.35	27.62	5.23	22.55	5.40	20.46	6.64	21.54	6.11	139.83***	.23	10.53***	.02
Father																
PBI Care	39.21	3.36	40.11	3.47	39.64	3.43	27.02	6.97	26.89	6.56	26.95	6.72	726.29***	.60	*ns*	
PBI Autonomy	18.77	3.42	18.29	3.13	18.54	3.29	17.19	4.22	15.81	4.23	16.41	4.27	34.92***	.07	7.26**	.01
PBI Overprotection	5.49	1.71	5.96	1.82	5.71	1.78	7.57	2.82	8.50	3.12	8.10	3.02	111.45***	.19	10.13**	.02
YSR Internalizing	10.12	7.47	12.99	8.36	11.48	8.02	14.94	9.09	19.58	9.25	17.55	9.44	52.87***	.10	22.98***	.05
YSR Externalizing	9.95	7.37	7.88	5.87	8.97	6.77	15.18	7.57	12.68	6.07	13.77	6.86	64.73***	.12	13.39***	.03
RSE Self-esteem	22.55	4.29	20.36	4.53	21.51	4.54	19.31	5.12	17.29	4.77	18.17	5.01	54.02***	.10	23.99***	.05
SWLS Life satisfaction	28.43	5.16	27.14	5.33	27.82	5.27	22.07	5.61	20.96	6.39	21.45	6.08	145.70***	.23	5.32*	.01
Peer																
NRI Social support	4.20	.39	4.34	.34	4.28	.37	3.46	.50	3.58	.44	3.52	.47	381.88***	.45	11.78***	.02
NRI Negative interaction	1.93	.46	1.86	.50	1.89	.49	2.46	.58	2.43	.50	2.44	.54	131.43***	.22	*ns*	
YSR Internalizing	10.50	8.09	13.41	8.10	12.16	8.21	14.86	9.87	19.35	9.09	17.16	9.72	40.19***	.08	20.75***	.04
YSR Externalizing	9.36	5.90	7.81	5.58	8.48	5.76	14.53	8.48	13.51	6.26	14.01	7.43	80.32***	.15	4.47*	.01
RSE Self-esteem	22.36	4.93	20.79	4.40	21.47	4.69	19.35	5.11	16.93	4.86	18.11	5.12	59.27***	.11	20.03***	.04
SWLS Life satisfaction	24.67	6.34	25.05	6.86	24.89	6.63	21.13	6.09	21.83	6.66	21.49	6.38	30.94***	.06	*ns*	

*$p < .05$; ** $p < .01$; *** $p < .001$.

Two MANOVAs were performed for peer attachment style: one relative to the two NRI scales and the other to the two YSR scales, the RSE scale, and the SWLS scale. A multivariate effect for attachment style was found: NRI, $F(2, 469) = 257.18$, $p < .001$, $\eta^2 = .52$; YRS, RSE, SWLS, $F(4, 467) = 41.68$, $p < .001$, $\eta^2 = .26$. The multivariate main effects for gender were also significant: NRI, $F(2, 469) = 6.55$, $p < .01$, $\eta^2 = .03$; YRS, RSE, SWLS, $F(4, 467) = 10.31$, $p < .001$, $\eta^2 = .08$. However, the gender by attachment style interaction was nonsignificant: NRI, $F < 1$; YRS, RSE, SWLS, $F < 1$. The ANOVA results for peers are presented in Table 4. Findings showed that the secure group perceived they had higher social support and less negative interactions with their peers than the insecure group. Moreover, the secure group reported less internalizing and externalizing disorders and higher self-esteem and life satisfaction than the insecure group. Concerning gender differences, females perceived higher levels of social support from their peers than males. Further, while females showed higher internalizing disorders than males, males showed higher externalizing disorders than females. Finally, males reported higher self-esteem than their female counterparts.

Finally, discriminant function analyses were performed to identify the combination of variables that differentiated the attachment style groups from each other, for each version. In relation to parental classification, the predictor variables were the scores from the three PBI scales, the two YSR scales, the RSE scale, and the SWLS scale. For maternal classification, according to Comrey and Lee's (1992) guidelines for interpreting factor loadings, Care was an excellent predictor of discriminant function, and Overprotection (negative) and Life satisfaction were also good predictors (see Table 5). An ANOVA of discriminant function scores by attachment group was significant, $F(1, 485) = 678.69$, $p < .001$, $\eta^2 = .58$, with the secure group scoring higher than the insecure group.

To evaluate the accuracy of classifications obtained by discriminant analysis, we also used the *Proportional Chance Criterion*, which allowed computation of the improvement represented by the discriminant analysis procedure compared to that of casual assignment of participants to groups (Barbaranelli, 2007). The Proportional Chance Criterion was examined via Huberty's Z statistic (zH) which follows the normal standardized distribution. The index was 16.82 ($p < .001$). Overall, the model correctly classified 88.5% of the original sample and 87.9% of the cross-validated sample.

In relation to paternal classification, the loading for the discriminant function indicated that Care was an excellent predictor, Life satisfaction was a good predictor, and Overprotection (negative) was a fair predictor (see Table 5). An ANOVA of discriminant function scores by attachment group was significant, $F(1, 530) = 850.38$, $p < .001$, $\eta^2 = .62$. Specifically, the secure group scored higher than the insecure group. The Huberty's Z index was 17.97, which was still significant ($p < .001$). In this case, the model correctly classified 91.4% of the original sample and 91% of the cross-validated sample.

Finally, in relation to peer classification, predictor variables were scores from the two NRI scales (Social Support and Negative Interaction), the two YSR scales (Internalizing and Externalizing Disorders), the RSE scale, and the SWLS scale.

TABLE 5
Results of discriminant function analysis of attachment style for mother and father – Greenberg's classification

	Mother	Father
	Function 1	Function 1
Predictor	*r*	*r*
PBI Care	.94	.88
PBI Autonomy	.23	.20
PBI Overprotection	–.48	–.38
YSR Internalizing	–.19	–.30
YSR Externalizing	–.30	–.26
RSE Self-esteem	.27	.29
SWLS Life satisfaction	.40	.46
Canonical *r*	.76	.79
Wliks's Λ	.42 ($p < .001$)	.38 ($p < .001$)
% of Variance	100	100

Classification results	Mother		Father	
	Predicted group		Predicted group	
Actual group	Secure	Insecure	Secure	Insecure
Secure				
A	249 (96.1%)	10 (3.9%)	290 (95.4%)	14 (4.6%)
B	247 (95.4%)	12 (4.6%)	289 (95.1%)	15 (4.9%)
Insecure				
A	46 (20.2%)	182 (79.8%)	32 (14%)	196 (86%)
B	47 (20.6%)	181 (79.4%)	33 (14.5%)	195 (85.5%)
	Total correctly classified: 88.5% of A; 87.9% of B		Total correctly classified: 91.4% of A; 91 of B	

Note. A = original sample; B = cross-validation sample.

Analyses revealed that Social Support was an excellent predictor, Negative Interaction (negative) was a good predictor, and Externalizing Disorders (negative) was a fair predictor of the discriminant function (see Table 6). An ANOVA of function scores by attachment group was significant, $F(1, 472) = 667.94$, $p < .001$, $\eta^2 = .59$, with the secure group scoring higher than the insecure group. For this classification, the *z*H index was 16.56 ($p < .001$). Overall, the model correctly classified 87.6% of the original sample and 87.3% of the cross-validated sample.

TABLE 6
Results of discriminant function analysis of attachment style for peer – Greenberg's (A) and Vivona's (B) classifications

	Peer (A)	Peer (B)	
	Function 1	Function 1	Function 1
Predictor	*r*	*r*	*r*
NRI Social Support	.76	.77	.51
NRI Negative Interactions	– .45	–.42	.54
YSR Internalizing	– .24	–.25	.59
YSR Externalizing	– .35	–.34	.03
RSE Self-Esteem	.29	.30	–.32
SWLS Life satisfaction	.22	.22	–.02
Canonical *r*	.77	.77	.29
Wliks's Λ	.41 ($p < .001$)	.38 ($p < .001$)	.91 ($p < .001$)
% of Variance	100	93.8	6.2

Classification results	Peer (A)			Peer (B)		
	Predicted group			Predicted group		
Actual group	Secure	Insecure		Secure	Ambivalent	Avoidant
Secure			Secure			
A	236 (87.7%)	33 (12.3%)	A	226 (84%)	33 (12.3%)	10 (3.7%)
B	235 (87.4%)	34 (12.6)	B	223 (82.9%)	35 (13%)	11 (4.1%)
Insecure			Ambivalent			
A	26 (12.7%)	179 (87.3%)	A	15 (18.3%)	46 (56.1%)	21 (25.6%)
B	26 (12.7%)	179 (87.3%)	B	16 (19.5%)	44 (53.7%)	22 (26.8%)
			Avoidant			
			A	9 (5.9%)	38 (24.8%)	106 (69.3%)
			B	10 (6.5%)	39 (25.5%)	104 (68%)
	Total correctly classified: 87.6% of A; 87.3% of B			Total correctly classified: 75% of A; 73.6 of B		

Note. A = original sample; B = cross-validation sample.

Vivona's (2000) Classification

Using Vivona's (2000) classification rules, attachment style was determined for 530 individuals (67.6%) in the mother version, for 531 individuals (67.7%) in the father version, and

for 504 individuals (64.3%) in the peer version. The compositions by gender of the mother, father, and peer attachment style are shown in Table 7.

TABLE 7
Frequencies and proportions of males' and females' attachment styles – Vivona's classification

	Secure style		Ambivalent style		Avoidant style		Not categorized	
				Mother version				
	F	%	*F*	%	*F*	%	*F*	%
Male	125	30.7	49	12.0	90	22.1	143	35.1
Female	138	36.6	50	13.3	78	20.7	111	29.4
Total	263	33.5	99	12.6	168	21.4	254	32.4
				Father version				
Male	147	36.1	45	11.1	74	18.2	141	34.6
Female	132	35	29	7.7	104	27.6	112	29.7
Total	279	35.6	74	9.4	178	22.7	253	32.3
				Peer version				
Male	116	28.5	42	10.3	65	16.0	184	45.2
Female	153	40.6	40	10.6	88	23.3	96	25.5
Total	269	34.3	82	10.5	153	19.5	280	35.7

Descriptive statistics for the PBI, NRI, YSR, RSE, and SWLS scores are reported separately for parents and peers in Table 8.

Similar to Armsden and Greenberg's classification, using Vivona's classification, the multivariate analyses of variance (MANOVAs) of the three PBI scales and those of the two YSR scales, the RSE scale, and the SWLS scale by mother attachment style and gender also revealed significant multivariate effects for attachment style: PBI, $F(6, 1046) = 70.23$, $p < .001$, $\eta^2 = .29$; YRS, RSE, SWLS, $F(8, 1042) = 23.07$, $p < .001$, $\eta^2 = .15$, and gender: PBI, $F(3, 522) = 2.74$, $p < .05$, $\eta^2 = .02$; YRS, RSE, SWLS, $F(4, 520) = 17.81$, $p < .001$, $\eta^2 = .12$, but the gender by attachment style interaction was never significant: PBI, $F(6, 1046) = 1.88$, *ns*; YRS, RSE, SWLS, $F < 1$. Similarly, the MANOVAs on the three PBI scales and those on the two YSR scales, the RSE scale, and the SWLS scale by father attachment style and gender, revealed significant multivariate effects for attachment style: PBI, $F(6, 1048) = 83.73$, $p < .001$, $\eta^2 = .32$; YRS, RSE, SWLS, $F(8, 1040) = 24.38$, $p < .001$,$\eta^2 = .16$, and gender: PBI, $F(3, 523) = 8.14$, $p < .001$, $\eta^2 = .04$; YRS, RSE, SWLS, $F(4, 519) = 20.81$, $p < .001$, $\eta^2 = .14$, but the gender by attachment style interaction was nonsignificant: PBI, $F(6, 1048) = 1.38$, *ns*; YRS, RSE, SWLS, $F(8, 1040) = 1.24$, *ns*. The ANOVA results for mother and father are presented in Table 8. In both analyses, Bonferroni post-hoc tests were conducted, which revealed that the secure group reported higher perceived care from both parents than the two insecure groups ($p < .001$). Similarly, parental care was higher in the ambivalent group than in the avoidant group ($p < .001$). Further, parent's encouragement toward autonomy was higher in the secure group than in the ambivalent and avoidant ones

TABLE 8
Means and standard deviations of Study 2 variables by attachment style and gender, for mother, father, and peers – Vivona's classification

	Secure				Ambivalent				Avoidant				ANOVA			
	Male		Female		Male		Female		Male		Female		Group		Gender	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F	η2	F	η2
Mother																
PBI Care	40.38	3.22	41.49	2.41	35.13	4.96	35.31	5.45	31.01	4.87	29.72	6.99	287.03***	.52	*ns*	
PBI Autonomy	18.60	3.41	18.64	3.26	17.42	2.93	16.73	3.30	17.51	3.41	15.99	4.61	16.54***	.06	4.77*	.01
PBI Overprotection	5.80	1.80	5.85	1.68	7.86	2.29	8.66	2.25	8.27	2.58	8.80	2.76	96.04***	.27	5.11*	.01
YSR Internalizing	10.15	7.30	13.50	8.14	14.62	8.22	19.22	10.24	13.27	8.30	19.14	8.52	20.99***	.07	34.99***	.06
YSR Externalizing	9.62	6.16	7.69	5.51	14.48	7.70	11.18	5.41	15.23	8.19	13.27	6.29	41.43***	.14	15.35***	.03
RSE Self-esteem	22.50	4.80	20.65	4.35	19.89	4.73	16.48	4.94	19.01	5.15	17.14	4.80	34.88***	.12	28.12***	.05
SWLS Life satisfaction	28.30	5.03	27.01	5.35	25.86	5.48	21.96	6.07	21.91	5.03	20.38	6.78	72.04***	.22	18.37***	.03
Father																
PBI Care	39.21	3.36	40.11	3.47	32.48	5.19	34.83	4.61	26.08	6.85	26.08	6.53	412.06***	.61	4.65*	.01
PBI Autonomy	18.77	3.42	18.29	3.13	16.80	3.92	16.31	4.04	17.30	4.30	15.84	4.24	18.01***	.06	4.46*	.01
PBI Overprotection	5.49	1.71	5.96	1.82	7.20	2.06	8.62	2.50	7.57	2.83	8.38	3.13	60.09***	.19	14.43***	.03
YSR Internalizing	10.12	7.47	12.99	8.36	15.52	8.32	22.01	8.62	14.33	8.82	19.15	9.15	32.26***	.11	30.34***	.05
YSR Externalizing	9.95	7.37	7.88	5.87	15.05	7.54	12.47	6.61	14.50	7.38	12.47	5.95	33.24***	.11	11.99***	.02
RSE Self-esteem	22.55	4.29	20.36	4.53	18.78	5.06	16.21	4.91	19.59	5.09	17.43	4.79	32.36***	.11	23.28***	.04
SWLS Life satisfaction	28.43	5.16	27.14	5.33	25.09	5.23	21.76	6.22	21.94	5.43	20.86	6.40	73.38***	.22	11.08***	.02
Peer																
NRI Social support	4.20	.39	4.34	.34	3.76	.46	4.01	.37	3.30	.44	3.52	.44	223.10***	.47	27.23***	.05
NRI Negative interaction	1.93	.46	1.86	.50	2.46	.67	2.47	.47	2.40	.54	2.40	.49	65.13***	.21	*ns*	
YSR Internalizing	10.50	8.09	13.41	8.10	21.37	14.72	19.26	11.05	13.86	9.03	19.64	8.61	30.19***	.11	5.56*	.02
YSR Externalizing	9.36	5.90	7.81	5.58	13.65	7.64	11.42	5.91	14.94	8.97	13.83	6.41	40.38***	.14	6.16*	.01
RSE Self-esteem	22.36	4.93	20.79	4.40	19.27	4.72	16.05	5.02	19.04	5.27	17.00	4.91	36.33***	.13	22.30***	.04
SWLS Life satisfaction	24.67	6.34	25.05	6.86	23.48	6.11	20.90	6.89	19.89	5.78	22.01	6.57	18.56***	.07	*ns*	

* $p < .05$; ** $p < .01$; *** $p < .001$.

($p < .001$), which, in turn, were non different. Finally, parent's overprotection was lower in the secure group than in the two insecure groups ($p < .001$), which, in turn, were again non different. Moreover, results showed that the secure group reported less internalizing and externalizing disorders and higher self-esteem in relation to both parents, than the insecure groups ($p < .001$), which reported similar scores. Finally, the secure group reported more life satisfaction with mother and father than the insecure groups ($p < .001$), and the ambivalent group reported more life satisfaction than the avoidant group ($p < .05$). Regarding gender differences, females perceived lower levels of care from their fathers, lower levels of encouragement toward autonomy from both their mother and father, and higher overprotection from both their parents than males. Further, females showed higher internalizing disorders and, on the contrary, males showed higher externalizing disorders. Finally, males reported higher self-esteem and life satisfaction than their female counterparts.

Finally, MANOVAs on the two NRI scales and those on the two YSR scales, the RSE scale, and the SWLS scale by peer attachment style and gender, showed significant multivariate effects for attachment style: NRI, $F(4, 996) = 99.8$, $p < .001$, $\eta^2 = .29$; YRS, RSE, SWLS, $F(8, 992) = 22.57$, $p < .001$, $\eta^2 = .15$, and gender: NRI, $F(2, 497) = 13.68$, $p < .001$, $\eta^2 = .05$; YRS, RSE, SWLS, $F(4, 495) = 7.9$, $p < .001$, $\eta^2 = .06$, but the gender by attachment style interaction was nonsignificant: NRI, $F < 1$; YRS, RSE, SWLS, $F(8, 992) = 2.04$, *ns*. The ANOVA results in relation to peers are presented in Table 8. A Bonferroni post-hoc test was conducted. This revealed that the secure group perceived greater social support from their peers than the two insecure groups ($p < .001$), and the ambivalent group perceived higher levels of peer social support than the avoidant group ($p < .001$). Further, the secure group perceived less negative interaction with peers than the insecure groups ($p < .001$), which, in turn, reported non different negative interaction scores. Moreover, the secure with peer group reported less internalizing disorders than the insecure groups ($p < .001$), and the avoidant group showed less internalizing disorders than the ambivalent one ($p < .05$). The secure group also reported less externalizing disorders and higher self-esteem than the insecure groups ($p < .001$), which reported non different scores. Finally, the secure group reported a higher level of life satisfaction than the ambivalent ($p < .01$) and avoidant ($p < .001$) groups, which, in turn, were non different. With regard to gender differences, results showed that females perceived greater social support from their peers than males. Further, females showed higher internalizing disorders than males, whom, in contrast, showed higher externalizing disorders than females. Finally, males reported higher self-esteem.

Lastly, discriminant function analyses were conducted for each of Vivona's classifications. The same predictor variables were used for parent and peer classifications. Specifically, in relation to parent classification, predictor variables were scores from the three PBI scales, the two YSR scales, the RSE scale, and the SWLS scale.

Regarding maternal classification, Care was an excellent predictor of the first discriminant function, Overprotection (negative) was a good predictor, and Life satisfaction was a fair predictor (see Table 9). An ANOVA of discriminant function scores by attachment group was significant, $F(2, 549) = 337.13$, $p < .001$, $\eta^2 = .55$. A Bonferroni post-hoc test revealed that this function discriminated among all three groups. The secure group scored higher than the ambivalent group ($p < .001$), and the ambivalent group scored higher than the avoidant group ($p < .001$).

TABLE 9
Results of discriminant function analysis of attachment style for mother and father – Vivona's classification

	Mother		Father	
	Function 1	Function 2	Function 1	Function 2
Predictor	*r*	*r*	*r*	*r*
PBI Care	.93	.25	.90	.31
PBI Autonomy	.23	–.31	.19	–.53
PBI Overprotection	– .49	.66	–.36	.49
YSR Internalizing	–.18	.54	–.28	.45
YSR Externalizing	–.30	.14	–.24	.32
RSE Self-esteem	.26	–.55	.26	–.64
SWLS Life satisfaction	.40	– .34	.43	–.29
Canonical *r*	.74	.19	.79	.25
Wliks's Λ	.43 ($p < .001$)	.96 ($p < .01$)	.35 ($p < .001$)	.94 ($p < .001$)
% of Variance	97	3	96.3	3.7

	Mother			Father		
Classification results	Predicted group			Predicted group		
Actual group	Secure	Ambivalent	Avoidant	Secure	Ambivalent	Avoidant
Secure						
A	216 (83.4%)	40 (15.4%)	3 (1.2%)	255 (83.9%)	44 (14.5%)	5 (1.6%)
B	215 (83%)	41 (15.8%)	3 (1.2%)	255 (83.9%)	44 (14.5%)	5 (1.6%)
Ambivalent						
A	21 (22.6%)	46 (49.5%)	26 (28%)	8 (12.5%)	42 (65.6%)	14 (21.9%)
B	23 (24.7%)	40 (43%)	30 (32.3%)	10 (15.6%)	38 (59.4%)	16 (25%)
Avoidant						
A	18 (9%)	58 (29%)	124 (62%)	16 (8.1%)	40 (20.2%)	142 (71.7%)
B	19 (9.5%)	57 (28.5%)	124 (62%)	16 (8.1%)	41 (20.7%)	141 (71.2%)
	Total correctly classified: 69.9% of A; 68.7% of B			Total correctly classified: 77.6% of A; 76.7% of B		

Note. A = original sample; B = Cross-validation sample.

Loadings for the second discriminant function indicated that Overprotection, Self-esteem (negative), and Internalizing Disorders were very good predictors, and Life satisfaction (negative) and Encouragement toward autonomy (negative) were fair predictors of this function. An ANOVA of these discriminant function scores by attachment group was significant, $F(2, 549) = 10.38$, $p < .001$, $\eta^2 = .04$. Specifically, a Bonferroni post-hoc test revealed that the second func-

tion discriminated the ambivalent group from both the secure group ($p < .001$) and the avoidant group ($p < .001$). In contrast, the scores of the secure and avoidant groups did not differ. It is noteworthy that only a low percentage of variance can be explained by this function. Huberty's Z index for maternal classification was 19.75 ($p < .001$). Overall, the model correctly classified 69.9% of the original sample and 68.7% of the cross-validated sample.

With regard to paternal classification, loadings for the first discriminant function indicated that Care was an excellent predictor, Life satisfaction was a good predictor, and Overprotection (negative) was a fair predictor (see Table 9). An ANOVA of discriminant function scores by attachment style was significant, $F(2, 563) = 467.23$, $p < .001$, $\eta^2 = .62$. A Bonferroni post-hoc test revealed that this function discriminated among all the three groups, with the secure group receiving higher scores than the ambivalent group ($p < .001$), and the ambivalent group receiving higher scores than the avoidant group ($p < .001$).

Self-esteem (negative) and Encouragement toward autonomy (negative) were very good predictors of the second significant discriminant function, Overprotection and Internalizing Disorders were good predictors, and Externalizing Disorders and Care were fair predictors. An ANOVA of function scores by attachment group was significant, $F(2, 563) = 18.04$, $p <. 001$, $\eta^2 = .06$. Bonferroni post-hoc tests revealed that the second function discriminated the ambivalent group from both the secure group ($p < .001$) and the avoidant group ($p < .001$). On the contrary, the scores of the secure and avoidant groups did not differ. As was the case for maternal classification, the low percentage of variance explained by this function is noteworthy. For Vivona's paternal classification, the zH index was 21.36 ($p < .001$). Overall, the model correctly classified 77.6% of the original sample and 76.7% of the cross-validated sample.

Finally, like for Greenberg's classification, in relation to peer classification, predictor variables were scores from the two NRI scales, the two YSR scales, the RSE scale, and the SWLS scale. Discriminant analysis showed that Social Support was an excellent predictor of the first function, and Negative Interaction (negative) and Externalizing Disorders (negative) were fair predictors (see Table 6). An ANOVA of discriminant function scores by attachment style was significant, $F(2, 501) = 353.36$, $p < .001$, $\eta^2 = .59$. A Bonferroni post-hoc test revealed that this function discriminated among all three groups. More specifically, the secure group scored higher than the ambivalent group ($p < .001$), and the ambivalent group scored higher than the avoidant group ($p < .001$).

Loadings for the second significant discriminant function indicated that Internalizing Disorders and Negative Interaction were very good predictors, Social Support was a good predictor, and Self-esteem (negative) was a fair predictor of this function. An ANOVA of discriminant function scores by attachment group was significant, $F(2, 501) = 23.28$, $p <. 001$, $\eta^2 = .09$. Specifically, a Bonferroni post-hoc test revealed that the second function discriminated the ambivalent group from both the secure ($p < .001$) and the avoidant groups ($p < .001$). On the contrary, the scores of the secure and avoidant groups did not differ. A low percentage of variance was explained by this function. The Huberty's Z index for friend classification was 19.84 ($p < .001$). Overall, the model correctly classified 75% of the original sample and 73.6% of the cross-validated sample.

DISCUSSION

Study 2 provided evidence for Armsden and Greenberg's classification in the Italian context as well. A considerable discrepancy between adolescents securely and insecurely attached to both parents and peers was revealed. According to the prediction, adolescents with attachments to their parents marked by high security, perceived the relationships with both their mothers and fathers as being characterized by a higher global quality. Specifically, secure adolescents perceived higher care from both parents, namely, more affection, emotional warmth, empathy, and closeness, and, at the same time, they reported more encouragement of their independence and autonomy, and lower overprotection, that is less control and intrusion, than insecure adolescents. Further, securely attached adolescents perceived their peer relationships as being characterized by more social support, namely, more intimacy, nurturance, affection, reliable alliance, companionship, instrumental aid, satisfaction, and admiration, and less negative interaction, such as conflict, punishment, and antagonism, than insecurely attached adolescents. These findings are in line with those of previous studies that highlighted higher social competence in securely attached individuals (Allen et al., 2003; Laible, 2007; Zimmermann, 2004). Moreover, in line with our hypothesis, adolescents with attachments to their parents and peers characterized by high security were better adjusted. Secure adolescents manifested higher self-esteem and life satisfaction, and lower levels of internalizing and externalizing behavior problems than those with attachments marked by low security. These results are consistent with previous research findings (Buist et al., 2004; Muris et al., 2001).

Discriminant function analyses yielded successful prediction of secure and insecure attachment styles with both parents and peers for the original and cross-validation samples. All the variables that were expected to discriminate among different attachment styles contributed to the discriminant function analyses, and both secure and insecure attachment were predicted at greater than chance rates in the original and cross-validation samples. More specifically, concerning attachment to both parents, the variables that most accurately discriminated between the two attachment styles were parental care and, to a lesser extent, parental overprotection, and life satisfaction. On the other hand, the dimensions that best discriminated between the two peer attachment styles were social support and, to a lesser degree, negative interaction, and externalizing behavior problems. The parental care and overprotection variables, for parents, and the social support and negative interaction variables, for peers, directly relate to attachment theory (Ainsworth, 1989), because they theoretically refer to a secure parent and peer base and support for autonomy and independence. Discriminant function analyses therefore provided evidence for the IPPA construct validity, in both parent and peer versions.

Altogether, these results demonstrate the potential for Armsden and Greenberg's classification rules to assess the differential nature of adolescent parental and peer attachments.

Study 2 also provided support for Vivona's classification. As hypothesized, all three different attachment styles discriminated between the quality of both parent and peer relationships. Specifically, securely attached adolescents perceived both their parents as providing more care than insecurely attached adolescents, and, in turn, ambivalently attached adolescents perceived more parental care than adolescents with avoidant attachment styles. At the same time, secure adolescents perceived their peers as being more supportive than insecure adolescents, and, in turn, ambivalent adolescents perceived they had more social support from close friends than

avoidant adolescents. These data are in line with findings of previous studies which have been interpreted as suggesting that, because avoidant adolescents are more inclined to expect social partners to refuse their attachments needs (Isabella & Belsky, 1991), they are less likely to perceive both parents and peers as providers of support (Kobak & Sceery, 1988; Vivona, 2000).

With regard to well-being measures, the differences were less marked between the two types of insecurely attached to parents and peers groups. Specifically, as in previous studies, adolescents who were ambivalently and avoidantly attached to both mothers and fathers manifested similar internalizing and externalizing behavior problems (Heiss et al., 1996; Nelis & Rae, 2009; Vivona, 2000) and similar levels of self-esteem (Feeney & Noller, 1990). On the contrary, ambivalent and avoidant participants differed on life satisfaction levels. Adolescents who were ambivalently attached to both parents reported higher life satisfaction than those who were avoidantly attached. Therefore, insensitive or rejecting parent-adolescent relationships (Isabella & Belsky, 1991) appear to imply lower levels of life satisfaction. Instead, adolescents who were insecurely attached to peers, namely either ambivalent or avoidant, reported similar externalizing behavior problems and similar levels of self-esteem and life satisfaction (Feeney & Noller, 1990). Ambivalent adolescents were instead more anxious and depressed (i.e., had internalizing behavior problems) than avoidant individuals, and this is in line with previous research (Rosenstein & Horowitz, 1996; Kobak et al., 1991). Therefore, just like Mikulincer and Florian's (1998) study, our results provide evidence that insecure attachment, whether ambivalent or avoidant, can be considered as a potential risk factor for adolescent maladjustment.

Discriminant function analyses yielded successful predictions of secure attachment style with both parents and peers for the original and cross-validation samples. Distinctions between the two different types of insecure attachment style appeared to be less pervasive. However, once again, all the variables that were expected to distinguish among different attachment styles contributed to the discriminant function analyses, and both avoidant and ambivalent attachment were predicted at greater than chance rates in the original and cross-validation samples. As for Armsden and Greenberg's classification, the variables that strongly influenced the differentiation between the three attachment styles were dimensions linked to the attachment theory (Ainsworth, 1989), such as parental care and overprotection for parents, and social support and negative interaction for peers.

Altogether, these results also confirmed the potential for Vivona's classification rules to measure the different nature of adolescent attachments with parents and peers.

Conclusions

The aim of the present study was to provide a useful contribution for the validation, in the Italian context, of a self-report measure, able to assess different types of attachment relationships, such as those with mother, father, and peer.

Overall, this study tested the IPPA factor structure, and proved its reliability (Study 1) and construct validity (Study 2). In other words, the IPPA is not only an appropriate instrument to evaluate the perceptions adolescents have of the quality of their attachment relationships, but also a useful measure for the study of individual differences in attachment styles across different types of close relationships.

Therefore, adaptation of this scale could enable investigation in the Italian context of parent and peer attachment relationships during a particularly critical developmental phase such as adolescence. Access to a this measure that is equally reliable for different types of close relationships, would indeed allow further examination of similarities and differences in mother, father, and peer attachment relationships, using a common conceptual framework.

Finally, development of this research area could incorporate the study of individual attachment from a cross-cultural perspective.

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