



# Why are you passionately in love? Attachment styles as determinants of romantic passion and conflict resolution strategies

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## Abstract

Three studies explored the role of attachment styles as determinants of romantic passion and investigated how the interplay between these variables contributes to conflict resolution strategies within a romantic relationship. In Study 1, a secure attachment style was positively, and an avoidant attachment style negatively, associated with harmonious passion. Moreover, secure and anxious attachment styles were positively related to obsessive passion. In Study 2, we replicated and extended these findings by demonstrating that harmonious and obsessive passions positively predicted the use of adaptive and maladaptive conflict resolution strategies, respectively. In Study 3, results of Study 2 were replicated over time providing us with some information concerning the direction of the relationships among attachment, romantic passion, and conflict resolution strategies. Overall, the present results suggest that attachment styles are a determinant of romantic passion and that romantic passion mediates the relationships between attachment styles and the use of adaptive and maladaptive conflict resolution strategies.

**Keywords** Attachment styles · Romantic passion · Conflict resolution strategies · Interpersonal relationships

Passion is generally at the core of romantic relationships (Sternberg 1997). Indeed, in most theories of love, passion represents a major component with profound ramifications for how love is explained. Recently, a new perspective on romantic passion has been proposed. This perspective posits that two types of romantic passion exist: harmonious and obsessive. Each one is hypothesized to differently influence the form of engagement someone develops with one's partner. Harmonious passion entails a more flexible form of engagement, whereas obsessive passion is associated with a more rigid one. Furthermore, romantic passion also influences the type of conflict resolution strategies that people use within their romantic relationship (Carbonneau and Vallerand 2013). For example, someone might become very defensive during a disagreement while someone else might try to compromise so as to find a common ground. Although we are starting to generate insights into the consequences of the two types of romantic passion (e.g., Carbonneau et al. 2016; Ratelle et al. 2013), still little is known about

the determinants of romantic passion. Thus, how do people develop one type of romantic passion over the other? So far, some research has examined the links between passion and couple conflict situations, but little or no research has been conducted on the determinants of romantic passion. This is what the present research seeks to do.

The literature on romantic relationships has established the importance of attachment as a determinant of the romantic sphere (Simpson 1990; Simpson et al. 2007). Specifically, past research has shown that attachment styles (i.e., secure, anxious, and avoidant) impact self-determination in romantic relationships (Leak and Cooney 2001). In addition, past research has established that attachment styles influence communication patterns and conflict resolutions used by couples (see Mikulincer and Shaver 2016a for a review). Thus, it seems plausible that one's attachment style could play a key role in the type of romantic passion one develops towards his or her romantic partner and the conflict resolution strategies that derive from it. The two main goals of this research were to explore the role of attachment styles as a potential determinant of romantic passion and to examine the possible mediating role of romantic passion in the relationships between attachment styles and conflict resolution strategies.

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## The dualistic model of passion

Passion is defined as a strong inclination towards a self-defining activity (object, person, or ideology) that one loves, finds important and meaningful, and in which one invests time and energy (Vallerand 2008, 2010, 2015; Vallerand et al. 2003). It is specific to the activity and therefore is not a trait. The Dualistic Model of Passion (DMP) suggests the existence of two types of passion, namely obsessive and harmonious passion.

Obsessive passion (OP) entails an internal pressure because people feel controlled by their passionate activity. It can take a disproportionate place in their lives, leading individuals with an OP to neglect other important life aspects. This type of passion comes from a controlled internalization of the activity into one's identity (i.e., an internalization directed by intrapersonal and/or interpersonal forces; Deci and Ryan 2000; Vallerand 1997). Research has shown that it predicts negative consequences during and after activity engagement (Vallerand 2015). On the other hand, with harmonious passion (HP) individuals freely and deliberately engage in their beloved activity. Thus, behavioral engagement is flexible. Individuals with a HP choose when and how they want to practice their passionate activity. This type of passion results from an autonomous internalization of the activity into the person's identity (Deci and Ryan 2000; Vallerand 1997) and people with a HP experience positive outcomes both during and after activity engagement (Vallerand 2015).

Empirical support has been provided for several aspects of the passion conceptualization (see Vallerand 2008, 2010, 2015 for reviews). Results from exploratory and confirmatory factor analyses from more than 20 different studies using the Passion Scale (e.g., Marsh et al. 2013; Vallerand et al. 2003, Study 1; Vallerand et al. 2006, Study 1) supported the existence of the two constructs, namely OP and HP. In addition, over 200 studies provide support for the prediction of the DMP as pertains to outcomes where HP leads to adaptive outcomes and OP to less adaptive, and at time maladaptive, outcomes (see Vallerand 2010, 2015; Vallerand and Houliort 2019). It should be noted that because passion is so intrinsically tied with people's lives, research has been conducted in a number of real-life contexts, including work, education, sports, leisure activities and others (see Vallerand 2015, for a review). More recently, OP and HP have also been studied in the context of relationships (Jowett et al. 2013; Philippe et al. 2010) as well as romantic relationships (Carbonneau and Vallerand 2013; Ratelle et al. 2013).

## Romantic passion

In line with Vallerand et al. (2003) and Vallerand (2015), it was proposed that the dualistic conceptualization of passion also applies to romantic involvement (Carbonneau and

Vallerand 2013; Ratelle et al. 2013; Vallerand and Carbonneau 2016). Based on this model, romantic passion is defined as a strong inclination towards a romantic partner that one loves and with whom one has a relationship that is deemed important and into which one invests significant time and energy (Ratelle et al. 2013). As with passion for activities, two types of romantic passion are proposed. An OP towards one's romantic partner involves that an internal pressure drives the person to pursue the romantic relationship. Thus, with an OP, people feel that their romantic relationship controls them and that it conflicts with other important life aspects. Conversely, a HP for one's beloved partner entails that the individual willingly chooses to engage in the romantic relationship. Thus, with a HP, people autonomously seek the romantic relationship (they don't feel internally obligated to), and it is in harmony with other life domains.

Previous research has provided support for the validity of the DMP as applied to romantic relationships (Carbonneau and Vallerand 2013; Carbonneau et al. 2016; Ratelle et al. 2013). Findings from a series of three studies on the consequences of romantic HP and OP revealed that, controlling for gender, HP leads to greater relationship quality than OP (Ratelle et al. 2013). In addition, results showed that one's type of romantic passion impacts one's partner's relationship quality and predicts relationship length three months later.

Other research has also explored how one's type of romantic passion is related to the use of adaptive versus non-adaptive emotion regulation strategies within the relationship and their effects on well-being. Findings from self-reported data revealed that having a romantic HP fosters the use of adaptive emotion regulation strategies which in turn, positively predicts well-being (St-Louis et al. 2018). On the other hand, results showed that having a romantic OP limits the use of adaptive emotion regulation strategies by couples and even predicts the use of non-adaptive strategies that are detrimental to well-being. Thus, past research on the consequences of romantic passion uncovers that having a romantic HP towards one's partner leads to greater benefits both for the couple and the individual. However, so far, no research has been conducted on the determinants of romantic passion. What are the factors that influence an individual to develop an OP or a HP for a romantic partner? The present article posits that an answer to this question resides in attachment styles.

## Attachment and romantic relationships

Attachment theory conceptualizes attachment as "the propensity of human beings to make strong affectional bonds to particular others" (Bowlby 1977). According to this theory, children's expectations about their caregivers' sensitive responsiveness and accessibility are internalized and become

schemes of understanding for later relationships outside the family (Ainsworth et al. 1978; Bowlby 1973). Hazan and Shaver (1987) have posited that we can understand adult romantic relationship by applying Bowlby's and Ainsworth's theories to the domain of adult love because mental models of attachment generally persist through life (Bowlby 1973). According to Shaver and Hazan (1988), there are three adult attachment styles: Secure, anxious, and avoidant. A secure attachment style is characterized by the ability to become emotionally close to others, to be comfortable depending on them and having them depend on oneself (Bartholomew 1990). An anxious attachment style is defined as a fear of interpersonal rejection or abandonment, an excessive need for approval from others, and distress when one's partner is unavailable or unresponsive. Finally, an avoidant attachment style is defined as a fear of dependence and interpersonal intimacy, an excessive need for self-reliance, and reluctance to self-disclose (Shaver and Hazan 1988). People who score high on anxious and avoidant attachment styles are assumed to have an insecure adult attachment orientation (Brennan et al. 1998; Lopez and Brennan 2000; Mallinckrodt 2000).

Existing research on attachment in adulthood has shown that insecure attachment styles lead to negative consequences whereas a secure attachment style predicts positive outcomes (Bippus and Rollin 2003; Bonache et al. 2019; Clymer et al. 2006; Creasey 2002; Simpson 1990; Simpson et al. 2007). More specifically, past research on the consequences of attachment styles uncovered that secure and insecure attachment styles impact one's motivation to engage in a romantic relationship in a different way. Indeed, research has shown that having a secure attachment style allows one to engage in a self-determined romantic relationship, that is being authentic, open, and supportive in the relationship because it feels right or genuine, whereas insecure attachment styles limit such self-determined involvement, that implies being in a relationship because the individual believes he or she has to be, and doing what the relationship partner wants in order to avoid his or her anger (Leak and Cooney 2001). Moreover, according to Mikulincer and Shaver (2016b), a secure attachment style is associated with the development of personal characteristics enabling one to build positive and stable relationships. Indeed, because an individual with a secure attachment style is confident and not trying to protect a fragile sense of self-worth, he or she can focus on prosocial activities that help develop and maintain healthy relationships.

## Attachment and romantic passion

While the research above is relevant and has shown that one's attachment style impacts outcomes that take place in a romantic relationship, little research has addressed

how attachment styles may influence romantic passion. Hatfield and Rapson (1993) posited that the internalization of a particular history of attachment experiences (e.g., self-esteem threats, dependency, insecurities, anxiety, fear, and acute deprivation) should play an important role in the development of passionate love (characterized by passion and "longing for union with another"). However, they have not conducted research on this issue. Furthermore, two studies have examined the relationship between attachment and romantic passion as defined by Sternberg (1986), i.e. an unstable short-term drive that leads to emotional stimulation, physical or/and sexual arousal. These studies have found that attachment patterns characterized by security and closeness were positively related to passion (Madey and Rodgers 2009) and individuals with secure and anxious attachment styles wanted more passion in ideal love than avoidant individuals (Mikulincer and Erev 1991). Moreover, some studies have looked at the relationship between attachment styles and Lee's (1977) love styles. Two of these love styles, Eros (i.e., presence of physical attraction, commitment, and love; Hendrick and Hendrick 1986) and Mania (i.e., possessive and dependent love; Hendrick and Hendrick 1986), although not dealing specifically with passion, nevertheless share some similarities with harmonious and obsessive passion, respectively. Specifically, Eros would seem to share with harmonious passion the more mature perspective on love, whereas Eros seems to share some sense of immaturity with obsessive passion. Research has shown that Eros was positively related to a secure attachment style whereas Mania was positively associated with an anxious attachment style (Fricker and Moore 2002; Hendrick and Hendrick 1989; Levy and Davis 1988).

Although the above findings shed some light on the relationship between attachment and passion (or related constructs), they should be considered carefully. Indeed, Sternberg's (1986) and Hatfield and Rapson's (1993) definitions of passion and Lee's (1977) love styles don't quite match the definition of romantic passion as presented by the DMP (for more details, see Ratelle et al. 2013). Of major importance is that whereas some authors do not deal with the construct of passion as such (e.g., Fricker and Moore 2002; Hendrick and Hendrick 1989; Lee 1997; Levy and Davis 1988), those who do so do not distinguish between harmonious and obsessive types of passion (e.g., Hatfield and Rapson 1993; Madey and Rodgers 2009; Mikulincer and Erev 1991; Sternberg 1986). At the very least, these studies underscore the fact that attachment styles and passion (or love styles; Lee 1977), however defined, are related. Since no research has examined the relationships between attachment styles and romantic HP and OP (Vallerand 2015; Vallerand et al. 2003), it appears important to examine these relationships because both types of passion, harmonious and obsessive,

are at the core of romantic relationships (Vallerand 2015; Vallerand and Carbonneau 2016).

Because attachment style is associated with motivational processes (see Leak and Cooney 2001) and that passion represents a form of motivational processes (Vallerand 2015), one can posit that attachment styles should also influence its development. Based on previous definitions of the different attachment styles, it would appear that a secure attachment style should positively predict both harmonious and obsessive passion. As mentioned previously, a secure attachment style is associated with the development of “harmonious and stable relationships” (Mikulincer and Shaver 2016b) which, in turn, could develop into harmonious romantic passion. Furthermore, for romantic passion to develop, individuals need to explore their environment to find that special person. Such exploration is supported by the presence of a secure base found in a secure attachment style (Ainsworth 1979). Thus, a secure attachment style should positively predict romantic HP and to a lesser extent OP. Moreover, it would appear that an anxious attachment style should predict the development of an obsessive romantic passion, because OP reflects a fragile sense of self (Mageau et al. 2011) and is driven by fear (Bélanger et al. 2013a) as is the anxious attachment style (Mikulincer et al. 2003). Finally, it appears that an avoidant attachment style would be unrelated to romantic passion because romantic passion entails commitment and involvement, whereas avoidant attachment style is characterized by a difficulty to rely on others and be intimate (Shaver and Hazan 1988).

## Attachment and passion in conflict resolution

In addition to assess the relationships between attachment styles and romantic passion, another goal of the present research pertains to assess the role of passion and attachment styles in resolution strategies used by couples during conflicts. Conflicts are inevitable in romantic relationships and not everyone responds to conflict in the same manner. Some people use resolution strategies that are adaptive while others employ maladaptive ones. Adaptive strategies are those associated with high concerns for advancing both one’s own priorities and others’ priorities (e.g., integrating conflict style; Rahim 1983). They are constructive for the relationship (Zacchilli et al. 2009) and they are associated with more positive interpersonal and personal consequences (e.g., relationship satisfaction, feeling less anger; Cann et al. 2008; Creasey and Hesson-McInnis 2001). On the other hand, maladaptive strategies are often destructive for the relationship (Zacchilli et al. 2009) and they are associated with negative interpersonal and personal consequences such

as conflict escalation (e.g., withdrawal, coercion) and violence during conflicts (Mikulincer and Shaver 2014).

Importantly, past research has shown that attachment styles influence the choice of adaptive and maladaptive conflict resolution strategies. Indeed, findings from past research revealed that individuals with low scores on attachment anxiety and avoidance perceive relational conflicts as less threatening and thus, they tend to use adaptive conflict resolution strategies (e.g., compromise and integration) as opposed to maladaptive ones, such as hostility and avoidance (Cann et al. 2008; Creasey and Hesson-McInnis 2001; Dominique and Mollen 2009; Pistole 1989). Furthermore, research has shown that people with a secure attachment style are more likely to express affection towards their partner and are less likely to use coercive, aggressive, or withdrawal strategies during conflicts (Heene et al. 2005; La Valley and Guerrero 2012). On the other hand, studies have also shown that anxious and avoidant attachment styles were negatively related to the use of adaptive conflict resolution strategies (e.g., integrating conflict style) and individuals with an anxious attachment style were more likely to oblige their partner than those with an avoidant attachment style (Cann et al. 2008; Pistole, 1989). Avoidant attachment style was also positively associated with a dominating and an avoiding conflict styles, while anxious attachment style was not related to these conflict resolution strategies (Cann et al. 2008). Thus, it seems that attachment styles play an important role in the type of resolution strategies that couples use during conflicts, with secure and insecure attachment styles leading respectively to the use of adaptive and maladaptive conflict resolution strategies.

It is important to note that romantic passion also affects conflict resolution strategies. In 2013, research by Carbonneau and Vallerand looked at the impact of romantic passion on couple’s behaviors during and after conflicts. The results of two studies revealed that OP was positively, whereas HP was negatively, associated with the use of maladaptive conflict resolution strategies such as criticism, contempt, defensiveness, and stonewalling (Gottman’s four horsemen of the apocalypse; Gottman 1994) during relationship conflicts. Their results also pointed out that HP was positively correlated with engagement in reparative behaviors following conflicts, whereas OP was not. Unfortunately, the use of adaptive conflict resolution strategies during conflicts was not explored. Indeed, both studies only examined destructive conflict behaviors.

Since both attachment styles and romantic passion are associated with the type of resolution strategies that are used by couples during conflicts, it would be important to determine how, taken together, these constructs predict conflict resolution strategies. Because attachment styles are relatively stable and reflect a style that has developed since childhood and romantic passion is activity-specific, can be

experimentally induced (Bélanger et al. 2013b), and has developed more recently, it can be hypothesized that attachment styles should predict passion which, in turn, would predict the use of conflict resolution strategies. Stated otherwise, the position taken here is that the impact of attachment styles on conflict resolution strategies is mediated by romantic passion.

## The present research

In light of the above, this research had two important goals. The first goal was to fill the gap in the literature on the determinants of romantic passion by examining how one's attachment style (secure, anxious, or avoidant) predicts romantic passion (OP and HP). The second goal was to shed further light on the possible mediating role of romantic passion in the relationships between attachment styles and the use of adaptive and maladaptive resolution strategies during conflicts.

Three studies were conducted to reach these goals. Study 1 used a cross-sectional design and ascertained the associations between the three attachment styles (secure, anxious, and avoidant), and the two types of romantic passion (OP and HP). Based on previous research on attachment styles, motivation, and passion (Leak and Cooney 2001; Vallerand 2015), it was hypothesized that a secure attachment style would be positively related to HP as this type of passion is highly volitional. Furthermore, it was hypothesized that a secure attachment style would also be positively associated with OP, because even though OP involves a rigid form of romantic engagement, it also implies love and a meaningful commitment towards the romantic partner (Ratelle et al. 2013, Study 1). Secure attachment style also provides the necessary secure base for the individual to explore his or her environment, eventually find one's special romantic partner, and develop a passion, whether harmonious or obsessive, for that person. Of additional importance, an anxious attachment style was also expected to be positively associated with OP. Indeed, insecurity has been found to fuel obsessive passion toward activities (Belanger et al. 2013a). Finally, as discussed previously, it was also suggested that an avoidant attachment style would be unrelated to romantic passion. In addition, gender was included in this hypothesized model as a control variable because it is an important determinant of romantic relationship functioning (Kirkpatrick and Davis 1994) and because it plays an important role in romantic passion (Ratelle et al. 2013). Study 2 aimed at replicating the results from Study 1 with respect to attachment styles and romantic passion. In addition, Study 2 sought to examine the mediating role of romantic passion in the relationships between attachment styles and conflict resolution strategies. It was hypothesized that a secure attachment style should be

positively associated with HP that, in turn, should positively predict the use of adaptive conflict resolution strategies. On the other hand, both secure and anxious attachment styles were expected to be positively associated with OP that, in turn, should positively predict the use of maladaptive conflict resolution strategies. Finally, the purpose of Study 3 was to replicate the findings from Study 2 with a three-month interval prospective design so as to provide some information concerning the direction of the relationships among the attachment, romantic passion, and conflict resolution variables and look at changes in outcomes.

## Study 1

The purpose of Study 1 was to test how one's attachment style (secure, anxious, or avoidant) may be related to one's type of romantic passion, HP or OP, while controlling for gender. Globally, it was predicted that a secure attachment style would be positively associated with HP, that secure and anxious attachment styles would be positively associated with OP, and that an avoidant attachment style would not be related to any type of passion.

## Method

### Participants and procedure

There were 302 initial participants in Study 1. Following elimination of participants who failed the test item (see below), a final sample of 295 participants was retained (38% men, 61% women, 1% undefined). Their age ranged from 18 to 70 years of age ( $M = 33.82$  years old,  $SD = 9.69$  years) and they had been involved in their romantic relationship for on average 7 years and nearly 2 months at the time of the study ( $M = 85.75$  months;  $SD = 88.96$  months). Participants were recruited via Amazon Mechanical Turk, a reliable crowdsourcing platform for data collection (Buhrmester et al. 2011; Goodman et al. 2013; Paolacci et al. 2010), where they were invited to complete an online survey about their romantic relationships. Participants first responded to demographic questions and questions about their relationship history and status. Then, they completed measures on their attachment style and romantic passion. Informed consent was obtained from all participants.

## Measures

### Demographic questions

The participant's age, gender, and relationship length were assessed.

## Attachment styles

Participants responded to the Experiences in Close Relationship Scale—Short Form (ECR-12; Wei et al. 2007) about their current and past romantic partners. This scale measures attachment styles with two dimensions: Avoidance and anxiety. The avoidance subscale includes items such as “I try to avoid getting too close to my romantic partner” (Cronbach’s  $\alpha = 0.83$ ), whereas the anxiety subscale includes items such as “I need a lot of reassurance that I am loved by my romantic partner” (Cronbach’s  $\alpha = 0.80$ ). The ECR-12 does not include a secure attachment subscale. Secure attachment is rather inferred from the absence of scores on the avoidance and anxiety subscales. Thus, there is a need to assess secure attachment independently from the anxious and avoidant attachment styles. Indeed, we believe that a concept such as secure attachment cannot merely be defined by the absence of something, even though having a secure attachment style may involve the absence of anxiety and avoidance. In light of the absence of a scale assessing secure attachment with only secure items, a 10-item secure attachment scale towards a romantic partner developed for another research (Paquette et al. 2019) was used in this research. The newly created secure attachment scale included items such as “I feel close to my romantic partner even when we are apart”, “I can rely on my romantic partner”, and “I trust my romantic partner” (Cronbach’s  $\alpha = 0.95$ ). Responses to all items were scored on a 7-point Likert scale (1 = *do not agree at all* and 7 = *very strongly agree*). A confirmatory factor analysis conducted on the items of the secure attachment scale indicated that the scale was unidimensional,  $\chi^2 = 56.76$ ,  $df = 30$ ,  $p = 0.002$ ; RMSEA = 0.06 [0.03, 0.08];  $p = 0.330$ ; CFI = 0.97; TLI = 0.95; SRMR = 0.03, with covariances between item 1 and items 2, 5, and 7, and covariances between items 5 and 8, and items 7 and 10. In addition, as part of another project (Paquette et al. 2019), the present participants also completed another attachment measure, the Measure of Attachment Qualities subscales (Carver 1997). Results of the correlations revealed that, as expected, our secure attachment scale negatively correlated with the Avoidance ( $r = -0.59$ ,  $p < 0.001$ ), Ambivalence-Merger

( $r = -0.46$ ,  $p < 0.001$ ), and Ambivalence-Worry ( $r = -0.51$ ,  $p < 0.001$ ) subscales, and correlated positively with the positive items that are measured in Carver’s (1997) Secure subscale ( $r = 0.64$ ,  $p = 0.001$ ). Finally, the correlations between our secure attachment scale and the other attachment styles of the ECR-12 subscales used in the present research are in line with hypotheses (see Table 1). Overall, the new secure attachment scale would appear to be valid and reliable.

## Romantic passion

The Romantic Passion Scale (RPS; Ratelle et al. 2013) has good validity and reliability (Marsh et al. 2013; Vallerand 2015). This scale measures HP (6 items) and OP (6 items) in the romantic sphere. The HP subscale included items such as “My relationship is in harmony with the other activities in my life” (Cronbach’s  $\alpha = 0.92$ ). The OP subscale included items such as “I have almost an obsessive feeling for my partner” (Cronbach’s  $\alpha = 0.76$ ). Responses to all items were scored on a 7-point Likert scale (1 = *do not agree at all* and 7 = *very strongly agree*).

## Results and discussion

### Preliminary analyses

All variables were screened for possible statistical assumption violations, as well as for outliers and missing values (Meyers et al. 2013). There was no missing value in the data set. Box plots indicated there was no univariate outlier and Mahalanobis distances revealed five multivariate outliers at the critical chi-square value at  $p = 0.001$ . These participants were kept in our sample because their presence did not influence the results. In addition, a test item was introduced in the questionnaire to control for the participants’ concentration. This item asked the participant to select the number 3 using a 7-point Likert scale. From our initial sample of 302 participants, seven participants were deleted because they did not give the right answer to the test item. The final model was tested on 295 participants. Inspection of skewness indices showed that all variables presented a normal

**Table 1** Means, standard deviations, and correlations among all variables (Study 1)

|              | <i>M (SD)</i> | (1) | (2)  | (3)  | (4)  | (5) |
|--------------|---------------|-----|------|------|------|-----|
| Secure (1)   | 5.67 (1.18)   |     | -.43 | -.69 | .77  | .10 |
| Anxious (2)  | 2.93 (1.34)   |     |      | .47  | -.35 | .47 |
| Avoidant (3) | 2.34 (1.16)   |     |      |      | -.62 | .11 |
| HP (4)       | 5.26 (1.34)   |     |      |      |      | .19 |
| OP (5)       | 3.28 (1.31)   |     |      |      |      |     |

*N* = 295

*Secure* secure attachment style, *Anxious* anxious attachment style, *Avoidant* avoidant attachment style, *HP* romantic harmonious passion, *OP* romantic obsessive passion

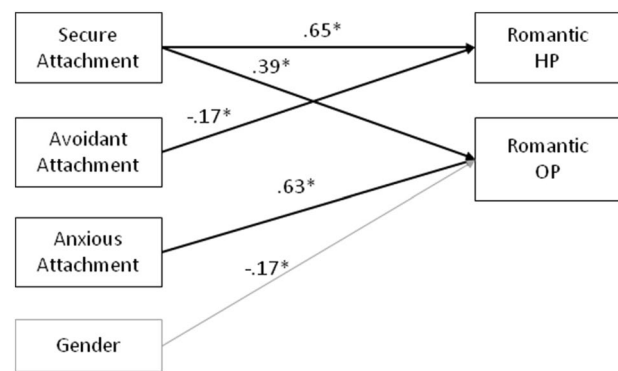
distribution ( $|skewness| < 1$ ). Moreover, as shown by bivariate scatterplots and residual plots, all variables were related to each other in a linear manner. Furthermore, independence of errors assumption was met (Durbin-Watson Test = 1.81) and last, variables revealed no multicollinearity ( $VIF < 5$ ). In addition, we controlled for type I error in the path analyses of all three studies using Benjamini and Hochberg’s (1995) procedure. Means, standard deviations, and correlations are presented in Table 1.

**Main analyses**

The proposed model posited that secure attachment style would be positively related to HP, that secure and anxious attachment styles would be positively associated with OP, and that avoidant attachment style would not be associated with neither types of passion. We also controlled for the influence of gender because previous studies showed that this variable is related to romantic passion (Ratelle et al. 2013). This model was composed of four exogenous variables (i.e., secure, avoidant, and anxious attachment styles, gender) and two endogenous variables (i.e., HP and OP). To test the hypothesized model, a path analysis was conducted and paths were drawn according to the hypotheses presented above. Thus, a path from secure attachment style to HP was specified, followed by paths from secure and anxious attachment styles to OP. Finally, the covariances among the four exogenous variables, as well as the covariances among the error terms were estimated. Results suggested that this model had a poor fit to the data and modification indices suggested adding negative paths from avoidant attachment to HP and from gender to OP. The results showed that this modified model had good fit to the data,  $\chi^2 = 3.93$ ,  $df = 3$ ,  $p = 0.270$ ;  $RMSEA = 0.03$  [0.00, 0.11];  $p = 0.545$ ;  $CFI = 1.00$ ;  $TLI = 0.99$ ;  $SRMR = 0.02$ .

The standardized solutions are presented in Fig. 1. Results showed that secure attachment style was positively related to HP ( $\beta = 0.65$ ,  $p < 0.001$ ). Secure ( $\beta = 0.39$ ,  $p < 0.001$ ) and anxious ( $\beta = 0.63$ ,  $p < 0.001$ ) attachment styles were positively related to OP. Avoidant attachment style was negatively related to HP ( $\beta = -0.17$ ,  $p = 0.006$ ). Finally, gender was negatively associated with OP ( $\beta = -0.17$ ,  $p < 0.001$ ), indicating that men were more obsessively passionate than women.

In sum, the present findings generally provided support for the proposed model. Globally, controlling for the influence of gender, secure attachment style was positively associated with HP. In addition, secure and anxious attachment styles were positively associated with OP. Finally, avoidant attachment style was negatively associated with HP. Although not explicitly hypothesized this path is theoretically plausible because, contrary to romantic HP that entails an open and secure engagement in the relationship (Ratelle



**Fig. 1** Results of the structural equation modeling analyses: Study 1. Standardized path coefficients are presented. For clarity concerns, covariances were omitted.  $N = 295$ . *HP* harmonious passion, *OP* obsessive passion. \* $p < .05$  or better

et al. 2013), an avoidant attachment style is defined as a reluctance to rely on others and to be intimate (Shaver and Hazan 1988). The relationship between the two constructs deserves to be further empirically explored.

**Study 2**

Study 2 aimed at replicating the findings from Study 1 and to extend these by examining the mediating role of passion in the relationships between attachment styles and romantic conflict resolution strategies. It was expected that a secure attachment style would be positively, and an avoidant attachment style would be negatively, associated with HP that, in turn, would be positively related to the use of adaptive conflict resolution strategies (i.e., compromise, separation). On the other hand, it was expected that secure and anxious attachment styles would be both positively related to OP which, in turn, would be positively associated with the use of maladaptive conflict resolution strategies (i.e., submission, reactivity, domination, and avoidance).

**Method**

**Participants and procedure**

There were 493 initial participants in Study 2. Following elimination of participants with missing data (see below), a final sample of 489 participants was retained (34% men, 65% women, and 1% undefined). Their age ranged from 18 to 70 years of age ( $M = 33.45$  years,  $SD = 10.20$  years). Participants were involved in their romantic relationship for an average of 6 years and 8 months ( $M = 80.06$  months;  $SD = 84.01$  months). Participants were recruited on Amazon Mechanical Turk’s website. They were asked to complete an online survey about their romantic relationship. Attachment

styles, romantic passions, and conflict resolution strategies were assessed. Informed consent was obtained from all participants.

## Measures

### Demographic questions

The participant's age, gender, and relationship length were assessed.

### Attachment styles

The same measures as in Study 1 were used to assess attachment styles towards romantic partners in general. The internal consistency indices (Cronbach's alphas) were 0.94 for the secure attachment style scale and 0.79 and 0.85 for the anxiety and avoidance attachment style subscales, respectively. Once again, a confirmatory factor analysis was conducted on the items of the secure attachment scale. Results indicated that the scale was unidimensional,  $\chi^2 = 66.66$ ,  $df = 31$ ,  $p < 0.001$ ; RMSEA = 0.05 [0.03, 0.07];  $p = 0.537$ ; CFI = 0.97; TLI = 0.96; SRMR = 0.03, with covariances between item 1 and items 2, 5, and 7, and covariances between items 2 and 6.

### Romantic passion

The same measure as in Study 1 was used to assess romantic passion. The Cronbach's alphas were 0.90 for HP and 0.80 for OP.

### Couple-conflict resolution strategies

Participants responded to an adapted version of the Romantic partner conflict scale (Zacchilli et al. 2009). This scale is composed of six factors: compromise, separation, avoidance, submission, interactional reactivity, and domination. The compromise subscale included three items such as "My partner and I collaborate to find a common ground to solve problems between us" (Cronbach's alpha = 0.86). The separation subscale included items such as "When we disagree, we try to separate for a while so we can consider both sides of the argument" (Cronbach's alpha = 0.79). The avoidance subscale included items such as "I try to avoid arguments with my partner" (Cronbach's alpha = 0.86). The submission subscale included three items such as "I give in to my partner's wishes to settle arguments on my partner's terms" (Cronbach's alpha = 0.89). The interactional reactivity included items such as "When my partner and I disagree, we argue loudly" (Cronbach's alpha = 0.83). The domination subscale included three items such as "When we argue or fight, I try to win" (Cronbach's alpha = 0.82). Responses to

all items were scored on a 7-point Likert scale (1 = *do not agree at all* and 7 = *very strongly agree*). The "adaptive strategies" and "maladaptive strategies" variables were created and used in the analyses using the following procedures. "Adaptive strategies" included all items from the compromise and separation subscales (Cronbach's alpha = 0.78) whereas "maladaptive strategies" included all items from the avoidance, submission, reactivity, and domination subscales (Cronbach's alpha = 0.88).

## Results and discussion

### Preliminary analyses

All variables were screened for possible statistical assumption violations, as well as for outliers and missing values (Meyers et al. 2013). From our original sample of 493 participants, four cases were removed because they did not complete the whole survey and thus, they had missing data on almost all variables. In addition, box plots revealed no univariate outliers and Mahalanobis distances revealed six multivariate outliers at the critical chi-square value at  $p = 0.001$ . These participants were kept in our sample because their presence did not influence the results. The final model was tested on 489 participants. Inspection of skewness indices showed that all variables presented a normal distribution ( $|\text{skewness}| < 1$ ). Moreover, as shown by bivariate scatterplots and residual plots, all variables were related to each other in a linear manner. Furthermore, independence of errors assumption was met (Durbin-Watson Test = 2.01) and last, variables revealed no multicollinearity ( $VIF < 5$ ). Means, standard deviations, and correlations between the variables are presented in Table 2.

### Main analyses

The proposed model posited that a secure attachment style would be positively, and an avoidant attachment style negatively, associated with HP which, in turn, would be positively related to the use of adaptive conflict resolution strategies. It was also expected that secure and anxious attachment styles would be positively related to OP which, in turn, would be positively associated with the use of maladaptive conflict resolution strategies. As in Study 1, we controlled for the influence of gender (Ratelle et al. 2013). The model was composed of four exogenous variables (i.e., secure, avoidant, and anxious attachment styles, and gender) and four endogenous variables (i.e., HP, OP, adaptive and maladaptive conflict resolution strategies). To test the hypothesized model, a path analysis was conducted and paths were drawn according to the hypotheses presented above. Thus, paths from secure and avoidant attachment styles to HP and from secure and anxious attachment styles to OP were specified.



**Table 2** Means, Standard Deviations, and Correlations among all Variables (Study 2)

|                            | <i>M (SD)</i> | (1) | (2)  | (3)  | (4)  | (5) | (6)  | (7)  |
|----------------------------|---------------|-----|------|------|------|-----|------|------|
| Secure (1)                 | 5.84 (1.11)   |     | -.45 | -.77 | .75  | .02 | .43  | -.36 |
| Anxious (2)                | 2.97 (1.32)   |     |      | .56  | -.36 | .44 | -.08 | .56  |
| Avoidant (3)               | 2.30 (1.22)   |     |      |      | -.63 | .16 | -.25 | .51  |
| HP (4)                     | 5.21 (1.24)   |     |      |      |      | .15 | .55  | -.30 |
| OP (5)                     | 3.28 (1.36)   |     |      |      |      |     | .18  | .51  |
| Adaptive Strategies (6)    | 4.45 (1.13)   |     |      |      |      |     |      | -.02 |
| Maladaptive Strategies (7) | 3.20 (1.16)   |     |      |      |      |     |      |      |

*N* = 489

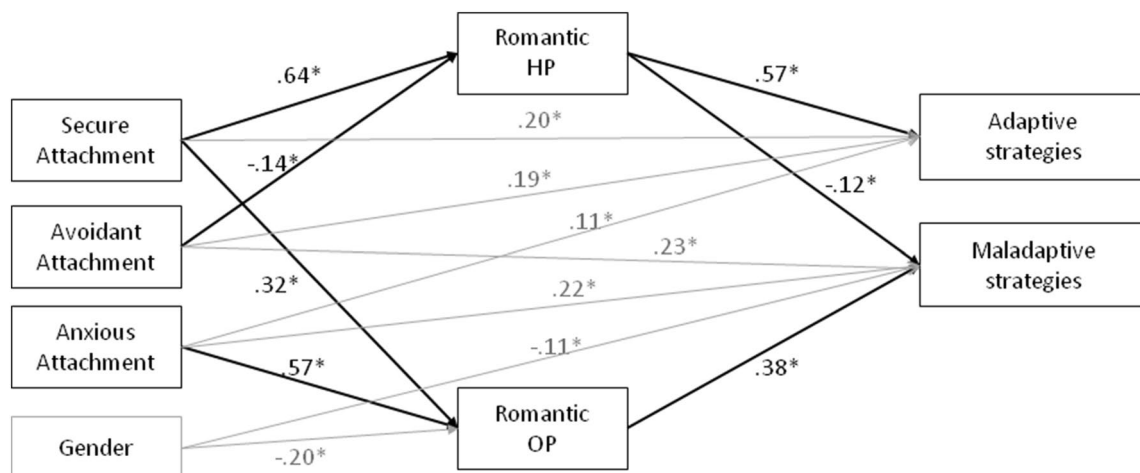
*Secure* secure attachment style, *Anxious* anxious attachment style, *Avoidant* avoidant attachment style, *HP* romantic harmonious passion, *OP* romantic obsessive passion, *Adaptive Strategies* adaptive conflict resolution strategies, *Maladaptive Strategies* maladaptive conflict resolution strategies

In addition, paths were drawn from HP to adaptive conflict resolution strategies and from OP to maladaptive conflict resolution strategies. Finally, the covariances among the four exogenous variables, as well as the covariances among the error terms were estimated.

Results suggested that the hypothesized model had a poor fit to the data and modification indices suggested adding positive direct paths from secure, avoidant, and anxious attachment styles to adaptive conflict resolution strategies and from avoidant and anxious attachment styles to maladaptive strategies. A negative path from HP to maladaptive strategies was also added. Finally, negative paths from gender to OP and gender to maladaptive strategies were also added. The results showed that this modified model had good fit to the data,  $\chi^2 = 9.13$ ,  $df = 6$ ,  $p = 0.166$ ; RMSEA = 0.03 [0.00, 0.07];  $p = 0.715$ ; CFI = 1.00; TLI = 0.99; SRMR = 0.02.

The standardized solutions are presented in Fig. 2. Results showed that secure attachment style was positively related to HP ( $\beta = 0.64$ ,  $p < 0.001$ ), OP ( $\beta = 0.32$ ,  $p < 0.001$ ), and

adaptive conflict resolution strategies ( $\beta = 0.20$ ,  $p = 0.011$ ). Anxious attachment style was positively related to OP ( $\beta = 0.57$ ,  $p < 0.001$ ) and maladaptive strategies ( $\beta = 0.22$ ,  $p < 0.001$ ). Avoidant attachment style was negatively related to HP ( $\beta = -0.14$ ,  $p = 0.008$ ), and positively related to maladaptive strategies ( $\beta = 0.23$ ,  $p < 0.001$ ). Results also showed that anxious ( $\beta = 0.11$ ,  $p = 0.040$ ) and avoidant ( $\beta = 0.19$ ,  $p = 0.008$ ) attachment styles positively predicted adaptive strategies. A path analysis examining the modified model while using all conflict resolution strategies separately, indicated that the Separation strategy was the only adaptive strategy predicted by avoidant ( $\beta = 0.17$ ,  $p = 0.006$ ) and anxious ( $\beta = 0.17$ ,  $p < 0.001$ ) attachment styles. It appears plausible that anxious and avoidant individuals would both separate during a conflict. However, it would be interesting to examine if it is the anxious/avoidant individual or his or her partner who actually initiates the separation and, following separation, who initiates the discussion to solve the issues. Finally, HP was positively associated with adaptive



**Fig. 2** Results of the structural equation modeling analyses: Study 2. Standardized path coefficients are presented. For clarity concerns, covariances were omitted. *N* = 489. *HP* harmonious passion, *OP* obsessive passion. \* $p < .05$  or better

strategies ( $\beta = 0.57, p < 0.001$ ) and negatively related to maladaptive strategies ( $\beta = -0.12, p = 0.025$ ). In addition, OP was positively related to maladaptive strategies ( $\beta = 0.38, p < 0.001$ ) and gender was negatively associated with OP ( $\beta = -0.20, p < 0.001$ ) and maladaptive strategies ( $\beta = -0.11, p = 0.002$ ), indicating that men were more obsessive than women in our sample and they used more maladaptive strategies.

Indirect effects were explored to further test the mediating role of romantic passion in the relationships between attachment styles and conflict resolution strategies. Bias-corrected bootstrapped 95% confidence interval estimates indicated that HP significantly mediated the relationships between secure attachment, on one hand, and adaptive ( $\beta = 0.36$ ; 95% CI 0.27 to 0.47,  $p < 0.001$ ) and maladaptive strategies ( $\beta = -0.08$ ; 95% CI  $-0.14$  to  $-0.01$ ,  $p = .021$ ), on the other hand. HP also significantly mediated the relationship between avoidant attachment and adaptive strategies ( $\beta = -0.08$ ; 95% CI  $-0.14$  to  $-0.02$ ,  $p = 0.009$ ), but it did not significantly mediate the relationship between avoidant attachment and maladaptive strategies ( $\beta = 0.02$ ; 95% CI 0.00 to 0.05,  $p = 0.145$ ). In addition, OP significantly mediated the relationships between secure attachment style and maladaptive strategies ( $\beta = 0.12$ ; 95% CI 0.08 to 0.17,  $p < 0.001$ ), and between anxious attachment style and maladaptive strategies ( $\beta = 0.22$ ; 95% CI 0.16 to 0.28,  $p < 0.001$ ).

In sum, the present findings provided support for the proposed model and replicated results of Study 1. Indeed, results of Study 2 demonstrated once again the role of attachment styles as determinants of romantic passion. Specifically, controlling for gender, secure attachment style positively, and avoidant attachment style negatively, predicted HP. In addition, secure and anxious attachment styles positively predicted OP. Furthermore, although there were some direct effects from attachment styles to the outcomes, the results showed that such effects were largely predicted by passion. As expected, romantic HP and OP positively and negatively predicted adaptive and maladaptive conflict resolution strategies, respectively.

### Study 3

Study 3 aimed at replicating the findings from Study 2 while using a prospective design. In Study 2, attachment, romantic passion, and romantic conflict resolution strategies were assessed at the same point in time which made it difficult to really determine if attachment styles lead to romantic passion that, in turn, leads to romantic conflict resolution strategies, or vice versa. For this reason, in Study 3 a three month interval between attachment styles at Time 1 and romantic passion and conflict resolution strategies at Time 2 sought to address this issue. Moreover, a different measure of romantic

conflict resolution strategies widely used in romantic relationship literature was used to assess these strategies, so as to generalize the present findings. These romantic conflict resolution strategies were also entered in the model as control variables at Time 1 allowing us to look at changes in strategies from Time 1 to Time 2. Thus, in line with the DMP and the results from Study 2, it was proposed that, while controlling for conflict resolution strategies and gender at Time 1, secure attachment style would positively, and avoidant attachment style negatively, predict HP at Time 2 which, in turn, would be positively associated with increases in adaptive conflict resolution strategies from Time 1 to Time 2. Moreover, secure and anxious attachment styles were expected to be positively associated with OP at Time 2 that, in turn, was hypothesized to be positively related to increases in maladaptive conflict resolution strategies from Time 1 to Time 2.

## Method

### Participants and procedure

A total of 592 individuals who were involved in a romantic relationship completed an initial online survey through Amazon Mechanical Turk. After their informed consent was obtained, participants were asked to answer questions on their general romantic attachment style, their romantic passion and their conflict resolution strategies. Demographic questions were also completed at the end of the questionnaire. Three months later, they were invited to complete a second online questionnaire on their romantic passion for their partner and their communication in couple-conflict situations. Of the initial sample, 308 participants (32.5% men and 67.5% women) completed the follow-up survey and were kept in the final sample after the participants with missing data were removed (see below). Their age ranged from 19 to 75 years of age ( $M = 36.18$  years old;  $SD = 11.54$  years). Participants were involved in their romantic relationship for an average of 8 years and 9 months ( $M = 105.57$  months;  $SD = 106.76$  months).

## Measures

### Demographic questions

The participant's age, gender, and relationship length were assessed.

### Attachment styles

The same measures as in Studies 1 and 2 were used to assess attachment styles towards romantic partners in general. The internal consistency indices (Cronbach's alphas) were 0.82

and 0.77 for the avoidant and anxious subscales, respectively, and 0.93 for the secure attachment style scale at Time 1. A confirmatory factor analysis was conducted on the items of the secure attachment scale. Results indicated that the scale was unidimensional,  $\chi^2=62.07$ ,  $df=30$ ,  $p=0.001$ ; RMSEA=0.06 [0.04, 0.08];  $p=0.223$ ; CFI=0.97; TLI=0.95; SRMR=0.03, with covariances between item 5 and items 1, 8, and 10, and covariances between items 3 and 10, and between items 7 and 9.

### Romantic passion

The same measure as in Studies 1 and 2 was used to assess romantic passion. The Cronbach's alphas were 0.92 for HP and 0.79 for OP at Time 2.

### Couple-conflict resolution strategies

Participants responded to the measure of styles of handling interpersonal conflict (Rahim 1983). This scale is composed of five factors: integration, compromise, avoidance, obligation, and domination. The integration subscale included three items such as "I have tried to work with my romantic partner to find solutions to a problem which satisfied our expectations" (at Time 1: Cronbach's alpha=0.76; at Time 2: Cronbach's alpha=0.78). The compromise subscale included items such as "I have tried to find a middle course to resolve an impasse" (at Time 1: Cronbach's alpha=0.80; at Time 2: Cronbach's alpha=0.78). The avoidance subscale included items such as "I have usually avoided open discussion of my differences with my romantic partner" (at Time 1: Cronbach's alpha=0.72; at Time 2: Cronbach's alpha=0.70). The obligation subscale included three items such as "I have usually accommodated the wishes of my romantic partner" (at Time 1: Cronbach's alpha=0.76; at Time 2: Cronbach's alpha=0.74). The domination subscale included three items such as "I have usually held on to my solution to a problem" (at Time 1: Cronbach's alpha=0.67; at Time 2: Cronbach's alpha=0.70). Responses to all items were scored on a 7-point Likert scale (1 = *do not agree at all* and 7 = *very strongly agree*). As in Study 2, "Adaptive strategies" included items from the integration and compromise subscales (at Time 1: Cronbach's alpha=0.85; at Time 2: Cronbach's alpha=0.86) whereas "maladaptive strategies" included items from the avoidance, obligation, and domination subscales (at Time 1: Cronbach's alpha=0.81; at Time 2: Cronbach's alpha=0.77).

## Results and discussion

### Preliminary analyses

All variables were screened for possible statistical assumption violations, as well as for outliers and missing values

(Meyers et al. 2013). A multivariate analysis of variance conducted on the group that only completed the survey at Time 1 and the group that completed the surveys at both Times 1 and 2, indicated that there was no significant difference between the two groups (Wilk's  $\Lambda=0.98$ ,  $F(8, 580)=1.74$ ,  $p>0.05$ ,  $\eta^2=0.02$ ). From the 316 participants who completed both surveys, Times 1 and 2, eight cases were removed because they did not complete the whole survey and therefore, they had missing data on almost all variables. In addition, box plots indicated that one case was identified as an univariate outlier and Mahalanobis distances revealed five multivariate outliers at the critical chi-square value at  $p=0.001$ . These participants did not influence the results, so they were kept in our sample. The final model was tested on 308 participants. Inspection of skewness indices showed that all variables presented a normal distribution ( $|\text{skewness}|<1$ ). Moreover, as shown by bivariate scatterplots and residual plots, all variables were related to each other in a linear manner. Furthermore, independence of errors assumption was met (Durbin-Watson Test=1.82) and last, variables revealed no multicollinearity ( $VIF<5$ ). Means, standard deviations, and correlations between the variables are presented in Table 3.

### Main analyses

The model proposed that, while controlling for conflict resolution strategies and gender at Time 1, a secure attachment style would be positively, and an avoidant attachment style negatively, associated with HP at Time 2 which, in turn, would be positively associated with adaptive conflict resolution strategies at Time 2. In addition, secure and anxious attachment styles were expected to be positively associated with OP at Time 2 which, in turn, would be positively related to maladaptive conflict resolution strategies at Time 2.

The proposed model encompassed six exogenous variables (i.e., secure, avoidant, and anxious attachment styles, adaptive and maladaptive conflict resolution strategies, and gender at Time 1) and four endogenous variables (i.e., romantic HP and OP, and adaptive and maladaptive strategies at Time 2). A first model was conducted and paths were drawn according to the hypotheses presented above. Thus, paths from secure and avoidant attachment styles at Time 1 to romantic HP at Time 2 were specified, followed by paths from secure and anxious attachment styles at Time 1 to romantic OP at Time 2. In addition, paths were drawn from romantic HP to adaptive strategies and from romantic OP to maladaptive strategies (all at Time 2). Finally, direct paths from adaptive and maladaptive conflict resolution strategies at Time 1 and their equivalent at Time 2 were added. Covariances among the six exogenous variables at Time 1, as well as the covariances among the error terms at Time 2 were estimated. The results showed that this

**Table 3** Means, Standard Deviations, and Correlations among all Variables (Study 3)

|                                   | <i>M (SD)</i> | (1)  | (2)  | (3)  | (4) | (5)  | (6)  | (7) | (8) | (9) |
|-----------------------------------|---------------|------|------|------|-----|------|------|-----|-----|-----|
| Secure (1)                        | 5.72 (1.00)   | –.43 | –.75 | .58  | .01 | .48  | .44  | .09 | .06 |     |
| Anxious (2)                       | 3.03 (1.24)   |      | .52  | –.26 | .35 | –.13 | –.16 | .31 | .19 |     |
| Avoidant (3)                      | 2.31 (1.10)   |      |      | –.49 | .14 | –.43 | –.35 | .11 | .11 |     |
| HP (4)                            | 5.27 (1.33)   |      |      |      | .21 | .34  | .49  | .01 | .03 |     |
| OP (5)                            | 3.29 (1.31)   |      |      |      |     | .01  | .06  | .36 | .52 |     |
| Adaptive Strategies Time 1 (6)    | 5.32 (1.10)   |      |      |      |     |      | .54  | .25 | .12 |     |
| Adaptive Strategies Time 2 (7)    | 5.20 (1.12)   |      |      |      |     |      |      | .09 | .21 |     |
| Maladaptive Strategies Time 1 (8) | 4.02 (1.06)   |      |      |      |     |      |      |     | .61 |     |
| Maladaptive Strategies Time 2 (9) | 3.97 (.99)    |      |      |      |     |      |      |     |     |     |

*N* = 308

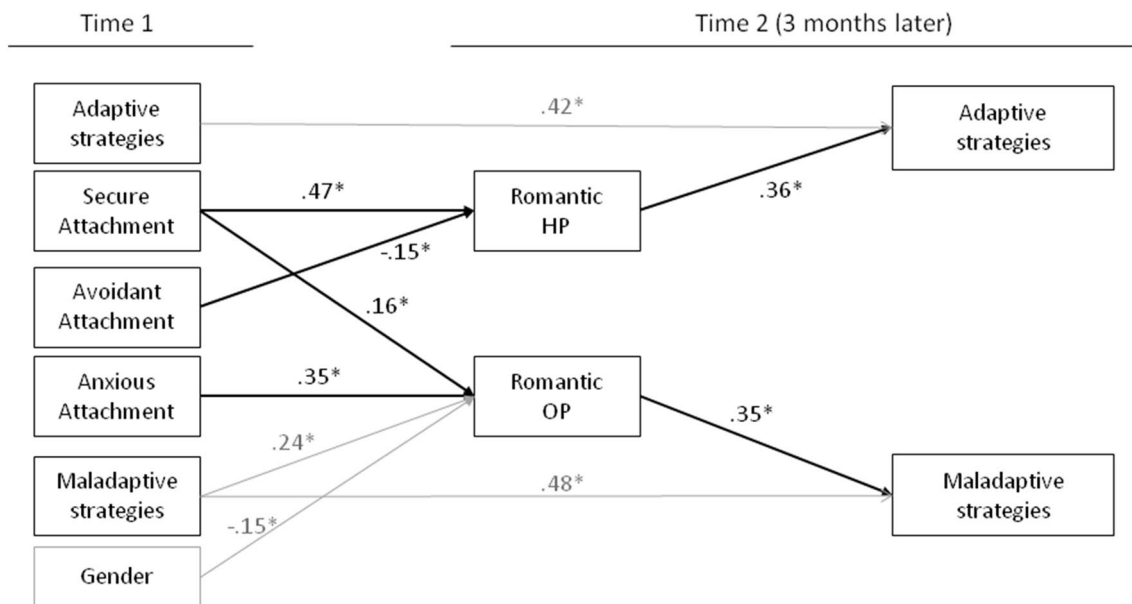
*Secure* secure attachment style, *Anxious* anxious attachment style, *Avoidant* avoidant attachment style, *HP* romantic harmonious passion, *OP* romantic obsessive passion, *Adaptive Strategies* adaptive conflict resolution strategies, *Maladaptive Strategies* maladaptive conflict resolution strategies

model did not have an acceptable fit to the data and suggested adding paths from maladaptive strategies and gender at Time 1 to OP at Time 2. The results showed that this modified model had an acceptable fit to the data,  $\chi^2 = 23.74$ ,  $df = 18$ ,  $p = 0.164$ ; RMSEA = 0.03 [0.00, 0.06],  $p = 0.797$ ; CFI = 0.99; TLI = 0.98; SRMR = 0.03.

The standardized solutions are presented in Fig. 3. Results showed that secure attachment was positively related to HP ( $\beta = 0.47$ ,  $p < 0.001$ ) at Time 2 and avoidant attachment was negatively related to HP at Time 2 ( $\beta = -0.15$ ,  $p = 0.028$ ). Secure ( $\beta = 0.16$ ,  $p = 0.002$ ) and anxious ( $\beta = 0.35$ ,  $p < 0.001$ ) attachment styles were positively related to OP at Time 2. HP was positively associated with adaptive strategies

( $\beta = 0.36$ ,  $p < 0.001$ ) and OP was positively related to maladaptive strategies ( $\beta = 0.35$ ,  $p < 0.001$ ), all at Time 2. Adaptive ( $\beta = 0.42$ ,  $p < 0.001$ ) and maladaptive ( $\beta = 0.48$ ,  $p < 0.001$ ) strategies at Time 1 were positively related to their equivalent at Time 2. In addition, maladaptive strategies at Time 1 were positively related to OP ( $\beta = 0.24$ ,  $p < 0.001$ ) at Time 2 and gender was negatively related to OP ( $\beta = -0.15$ ,  $p = 0.004$ ) at Time 2.

Indirect effects were explored to further test the mediating role of romantic passion in the relationships between attachment and romantic conflict resolution strategies. Bias-corrected bootstrapped 95% confidence interval estimates indicated that HP significantly mediated the relationship



**Fig. 3** Results of the structural equation modeling analyses: Study 3. Standardized path coefficients are presented. For clarity concerns, covariances were omitted. *N* = 308. *HP* harmonious passion, *OP* obsessive passion. \* $p < .05$  or better

between secure attachment and adaptive conflict resolution strategies at Time 2 ( $\beta=0.17$ ; 95% CI 0.10 to 0.26,  $p<0.001$ ). HP also significantly mediated the relationship between avoidant attachment and adaptive strategies at Time 2 ( $\beta=-0.06$ ; 95% CI  $-0.12$  to  $-0.01$ ,  $p=0.047$ ). In addition, OP significantly mediated the relationship between secure ( $\beta=0.06$ ; 95% CI 0.02 to 0.10,  $p=0.004$ ) and anxious ( $\beta=0.12$ ; 95% CI 0.08 to 0.18,  $p<0.001$ ) attachment styles at Time 1 and maladaptive conflict resolution strategies at Time 2.

In sum, the present findings provided support for the role of attachment in romantic passion. As in Studies 1 and 2, the results of Study 3 showed the role of attachment styles as determinants of romantic passion and the role of the latter in resolution strategies. Specifically, controlling for gender, secure attachment style at Time 1 positively, and avoidant attachment style at Time 1 negatively, predicted HP at Time 2 that, in turn, positively predicted increases in adaptive conflict resolution strategies from Time 1 to Time 2. In addition, secure and anxious attachment styles positively predicted OP that, in turn, positively predicted increases in maladaptive conflict resolution strategies from Time 1 to Time 2.

### Meta analysis

In order to further examine the role of attachment styles as determinants of romantic passion, a meta-analysis was conducted on all participants from Studies 1, 2, and 3. The final sample included 1092 participants (34.71% men, 64.74% women, 0.55% undefined). Their age ranged from 18 to 75 years of age ( $M=34.32$  years old,  $SD=10.52$  years) and they had been involved in their romantic relationship for on average 7 years and nearly 5 months at the time of the study ( $M=88.76$  months;  $SD=92.78$  months).

## Results and discussion

### Preliminary analyses

Screening of data using previous methods indicated that no assumption was violated. All variables presented a normal distribution ( $|\text{skewness}|<1$ ), were related to each other in a linear manner, and presented no multicollinearity ( $VIF<5$ ). There was no missing value, no univariate outlier, and ten multivariate outliers, which were kept in our sample because their presence did not influence the results. Means, standard deviations, and correlations between the variables are presented in Table 4.

### Main analyses

In line with the results from Studies 1 to 3, the proposed model posited that, controlling for gender, secure attachment style would be positively, and avoidant attachment style negatively, related to HP. In addition, secure and anxious attachment styles were expected to be both positively associated with OP. This model was composed of four exogenous variables (i.e., secure, avoidant, and anxious attachment styles, gender) and two endogenous variables (i.e., HP and OP). To test the hypothesized model, a path analysis was conducted. Paths from secure and avoidant attachment styles to HP were specified, followed by paths from secure and anxious attachment styles to OP, and a path from gender to OP. Finally, the covariances among the four exogenous variables, as well as the covariances among the error terms were estimated. Results showed that this model had good fit to the data,  $\chi^2=14.84$ ,  $df=3$ ,  $p=0.002$ ; RMSEA = 0.06 [0.03, 0.09];  $p=0.244$ ; CFI = 0.99; TLI = 0.97; SRMR = 0.02.

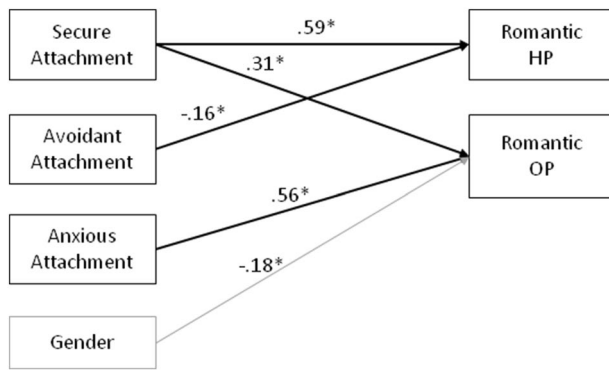
The standardized solutions are presented in Fig. 4. Results showed that secure attachment style was positively related to both HP ( $\beta=0.59$ ,  $p<0.001$ ) and OP ( $\beta=0.31$ ,  $p<0.001$ ). Anxious attachment style was positively related to OP ( $\beta=0.56$ ,  $p<0.001$ ) and avoidant attachment style was negatively related to HP ( $\beta=-0.16$ ,  $p<0.001$ ). Finally, gender was negatively associated with OP ( $\beta=-0.18$ ,

**Table 4** Means, Standard Deviations, and Correlations among all Variables (Meta-Analysis)

|              | <i>M (SD)</i> | (1) | (2)  | (3)  | (4)  | (5) |
|--------------|---------------|-----|------|------|------|-----|
| Secure (1)   | 5.76 (1.10)   |     | -.44 | -.74 | .71  | .04 |
| Anxious (2)  | 2.98 (1.30)   |     |      | .53  | -.33 | .42 |
| Avoidant (3) | 2.31 (1.17)   |     |      |      | -.59 | .14 |
| HP (4)       | 5.24 (1.29)   |     |      |      |      | .18 |
| OP (5)       | 3.28 (1.33)   |     |      |      |      |     |

*N* = 1092

*Secure* secure attachment style, *Anxious* anxious attachment style, *Avoidant* avoidant attachment style, *HP* romantic harmonious passion. *OP* romantic obsessive passion



**Fig. 4** Results of the structural equation modeling analyses: Meta-analysis. Standardized path coefficients are presented. For clarity concerns, covariances were omitted.  $N=1092$ . *HP* harmonious passion, *OP* obsessive passion. \* $p < .05$  or better

$p < 0.001$ ), indicating that men were more obsessively passionate than women.

In sum, the present findings provided support for the proposed model of the determinants of romantic passion. Controlling for the influence of gender, secure attachment style was positively, and avoidant attachment style negatively, associated with HP and secure and anxious attachment styles were positively associated with OP.

## General discussion

The present research had two principal aims: (a) to understand the role of attachment styles as determinants of romantic passion and (b) to examine how romantic passion mediates the relationships between attachment styles and the use of conflict resolution strategies. Using both cross-sectional and prospective designs, results of all three studies and the meta-analysis showed the role of attachment styles as determinants of romantic passion. More specifically, controlling for gender, a secure attachment style positively, and an avoidant attachment style negatively, predicted romantic HP. Moreover, secure and anxious attachment styles positively predicted OP. In addition, results of Studies 2 and 3 showed that romantic HP and OP mediated the relationships between attachment styles and the use of adaptive and maladaptive conflict resolution strategies. In Study 2, controlling for gender, a secure attachment style positively, and an avoidant attachment style negatively, predicted HP that, in turn, positively predicted the use of adaptive conflict resolution strategies and negatively predicted the use of maladaptive strategies. On the other hand, secure and anxious attachment styles positively predicted OP which, in turn, positively predicted the use of maladaptive conflict resolution strategies. Study 3 replicated these results over time, showing that controlling for gender, HP and OP predicted increases in the

use of adaptive and maladaptive strategies, respectively. This means that conflict resolution strategies used by individuals with a romantic HP improved over time, while strategies used by individuals with a romantic OP worsened over time. These findings have important implications for the DMP and for the field of romantic relationships.

## On attachment as a determinant of romantic passion

One main contribution of this research is that it is the first to investigate the determinants of romantic passion. Findings from the present research suggest that, while controlling for gender, attachment styles seem to represent an important determinant of romantic passion. In fact, this research revealed four major results. Firstly, a secure attachment style was the only attachment style that was positively associated with an adaptive romantic passion, namely HP. It thus seems that having a style of attachment that is characterized by trust, feelings of security, and safety with the loved one is conducive to a form of romantic engagement that is flexible and well integrated in the individual's life. Secondly, a secure attachment style was also positively associated with OP. This positive link makes sense conceptually because even though OP entails a rigid form of romantic involvement, this type of romantic passion also implies a meaningful involvement and love towards the romantic partner. Furthermore, to develop a romantic passion an individual needs to explore his or her environment to find that special person. A secure attachment style provides the secure base necessary for such exploration (Ainsworth 1979) and, consequently, the development of romantic passion. In the light of these results, one can conclude that romantic passion, regardless of the quality of involvement (HP or OP), entails a minimum of trust, security, and safety. Thirdly, an anxious attachment style was positively linked to OP. An anxious attachment style is characterized by a fear of being abandoned by the romantic partner. Thus, a possible explanation for this significant positive link could be that people with an anxious attachment style will try to prevent abandonment by over investing in the romantic relationship. By doing so, people will thus avoid pursuing any other type of activities or relationships. In turn, the romantic partner will become the center of the person's life. Finally, it should be underscored that the present findings also showed that having an avoidant attachment style was negatively associated with HP. Such a link between an avoidant attachment style and HP makes sense conceptually as avoidance is not conducive to a volitional engagement in something that one loves (HP). Furthermore, an avoidant attachment style is defined as a reluctance to rely on anyone and a discomfort with intimacy (Shaver and Hazan 1988) whereas it is the

opposite for harmonious romantic passion (e.g., individuals with a harmonious romantic passion might recognize that their love one makes them grow, Vallerand et al. 2003). Thus, having an avoidant attachment style may prevent one from developing a romantic HP.

### On the role of attachment styles and romantic passion in conflict resolution

A major contribution of the present findings deals with the mediating role of the two types of passion in the relationships between attachment styles and couple-conflict resolution strategies. Specifically, results showed that an individual with a secure attachment style positively linked to HP will use adaptive conflict resolution strategies, such as compromise or integration, because of the flexible romantic engagement that HP entails. Furthermore, results of Study 3 showed that HP led individuals to increase their use of adaptive strategies over time. These findings are in line with other research that shows that romantic HP leads to increases in adaptive couple outcomes over time such as use of reparative behavior following conflict (Carbonneau and Vallerand 2016) and fewer breakups (Ratelle et al. 2013). Nonetheless, it should be underscored that an avoidant attachment style limits the development of HP and as such prevents individuals from benefitting from the positive effects of HP on adaptive conflict resolution strategies.

On the other hand, an individual with a secure and an anxious attachment styles linked to OP will use maladaptive conflict resolution strategies, such as avoidance, domination, and reactivity, because of the rigidity in involvement that characterizes romantic OP. Furthermore, with OP individuals will increase their use of maladaptive strategies over time. Importantly, romantic OP seems to mediate the relationship between secure attachment style and conflict resolution strategies by leading individuals to adopt maladaptive strategies during conflicts. Future research should investigate further this relationship between secure attachment and OP.

Regarding the more specific role of romantic passion in couple-conflict resolution, findings from the present research provided additional support for the positive and negative effects of HP and OP, respectively. Past research has examined the relationship between romantic passion and engagement in destructive behaviors during conflicts and in reparative behaviors following conflicts with one's partner (Carbonneau and Vallerand 2013). Results from this research reveal that HP was negatively related to destructive behaviors during conflicts and positively related to reparative behaviors following conflicts. On the other hand, OP was positively associated with destructive behaviors during conflicts and unrelated to reparative behaviors following conflicts. Findings from the present research are in line

with the Carbonneau and Vallerand (2013) findings. Indeed, the present results revealed that, controlling for gender, HP was positively associated with adaptive conflict resolution strategies and was negatively associated with maladaptive conflict resolution strategies. It thus seems that having a HP allows one to discuss disagreements with one's romantic partner, to search for a solution acceptable to both partners, and to satisfy both sets of expectations. In addition, it seems that having a HP can prevent one from using unconstructive and unhealthy conflict resolution strategies, such as being aggressive, avoiding the subject of conflict, or not say one's point of view in the disagreement. Conversely, results revealed that OP was positively associated with maladaptive conflict resolution strategies. Indeed, having an OP was positively related to the use of maladaptive conflict resolution strategies. It is possible that, with an OP, one is unable to integrate his or her opinions with one's partner opinions, resulting in avoiding communication about problems (avoidance strategy), not telling one's opinion and accepting one's partner opinion (submission strategy), or expressing one's opinion while judging and without listening to the other's opinion (dominance and reactive strategies).

In addition to offering empirical support to the findings from the Carbonneau and Vallerand (2013) research, the present findings offer additional methodological validity. One limitation from the Carbonneau and Vallerand's research was that the instrument used to assess conflict strategies had limited validity. Indeed, the couple-conflict strategy scales used in their research were created for the purpose of their research and included only four items. Thus, the present research provides additional validity to Carbonneau and Vallerand's research because it used two different measures of couple-conflict resolution strategies previously validated and used in the romantic relationship literature, namely the Romantic Partner Conflict scale (Zacchilli et al. 2009) in Study 2, and the Styles of Handling Interpersonal Conflict scale (Rahim, 1983) in Study 3.

Future research is still needed on the role of romantic passion in couple conflict resolution strategies. For instance, future research could investigate some psychological mechanisms that may be responsible for this effect. Past research revealed that people with a HP and an OP do not regulate their emotions in the same way (St-Louis et al. 2018). Thus, emotion regulation could be an important mediator of the relationship between romantic passion and conflict resolution strategies. Indeed, if emotions are well regulated (fostered by HP), it may be easier to compromise and accept the partner's opinion, whereas if emotions are not dealt with in an adaptive way (because of OP), individuals may avoid conflicts or even express their opinions aggressively.

In addition to the meditational role of passion between attachment styles and conflict resolution strategies, the present findings also showed the presence of certain direct

effects from attachment styles to strategies. These findings are in line with past research showing that people with insecure attachment styles get involved more often in destructive patterns of communication (Ebrahimi and Ali Kimiaei 2014; Fitzpatrick et al. 1993; Givertz and Safford 2011; Mohr et al. 2013). The findings from Studies 2 and 3 bring support to this literature. Indeed, they replicated past findings with direct paths showing that a secure attachment style was positively and negatively related to the use of adaptive and maladaptive conflict resolution strategies, respectively, whereas avoidant and anxious attachment styles were positively related to maladaptive conflict resolution strategies. However, contrary to past research, in Study 2, unexpected significant positive direct links were obtained between anxious and avoidant attachment styles and an adaptive conflict resolution strategy. However, additional analyses revealed that these relationships were limited to the Separation strategy. Therefore, future research is necessary to reproduce these results and also to further clarify who, between the participant and his or her partner, actually initiates the adaptive separation resolution strategy. Finally, it should be underscored that the relationships between attachment styles and strategies were largely mediated by passion in Study 2 and in fact completely disappeared in Study 3 over a three-month period. Thus, future research is necessary on this issue.

## Limitations

Some limitations need to be addressed in this research. A first limitation pertains to the correlational nature of the studies. Even if structural equation modeling analyses were used, it is impossible to formulate causal interpretations of the relationships among the model variables assessed in this research because of the correlational design. However, the use of a prospective design in Study 3 gave additional support for the adequacy of the direction of effects of causality in the attachment, passion, and conflict resolution strategies model. An interesting avenue for future research could be to investigate the attachment-passion-conflict resolution strategies relationship while using experimental designs where HP and OP are induced (e.g., Bélanger et al. 2013b; Lafrenière et al. 2013, Study 2). A second limitation is that participants completed only self-report measures. Future research should include more objective measures of attachment and romantic passion, or informant reports (Carbonneau and Vallerand 2016). A third limitation is that the present research only assessed attachment styles, romantic passion, and conflict resolution strategies from one partner. Future research should investigate the determinants of romantic passion and their impact on couple-conflict resolution strategies with both partners while using dyadic data analyses (see

Ratelle et al. 2013). Future research could also examine how the partner's attachment styles and romantic passion influence the participant's own romantic passion and strategic approach to conflicts, and vice versa. Finally, even though our samples included participants from a large age range, they are limited as they only included participants from the United States, a Western individualistic country. Thus, it would be important to examine how the attachment-passion-conflict resolution strategies relationship unfolds in collectivist cultures. Future research is needed on this issue.

The present research was the first to document attachment styles as determinants of romantic passion, and its effects on relational conflict resolution strategies. Future research is needed to more fully explore the determinants of romantic passion and how the latter provides access to adaptive conflict resolution strategies in a romantic relationship.

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## Compliance with ethical standards

**Conflict of interest** All the authors declare that they have no conflict of interest.

**Ethical approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Comité institutionnel d'éthique de la recherche avec des êtres humains, No. 1744\_e\_2018) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed consent** Informed consent was obtained from all individual participants included in the study.

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