



## Passion for coaching and the quality of the coach–athlete relationship: The mediating role of coaching behaviors

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### ABSTRACT

**Objectives:** Using the Dualistic Model of Passion [Vallerand et al. (2003). Les passions de l'âme: on obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85, 756–767], this study examined the role of coaches' passion for coaching in athletes' perceptions of the quality of the coach–athlete relationship. Moreover, we hypothesized that coaches' harmonious and obsessive passion toward coaching should shape the manner they interact with their athletes that should, in turn, influence how athletes perceive relationship quality.

**Method:** Participants were 103 coach–athlete dyads engaged in one of several sports (e.g., gymnastics, volleyball, soccer). They completed self-administered questionnaires independently.

**Results:** Results from structural equation modeling revealed that harmonious passion for coaching positively predicted autonomy-supportive behaviors toward their athletes, while obsessive passion for coaching positively predicted controlling behaviors. Moreover, autonomy-supportive behaviors predicted high quality coach–athlete relationships as perceived by athletes that, in turn, positively predicted athletes' general happiness.

**Conclusions:** This study provides insights into the psychological factors that allow coaches to instigate high quality relationships with their athletes and the impact of the relationship on athletes' general happiness. Future research directions are discussed in light of the Dualistic Model of Passion and the coach–athlete relationship.

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Recently, the coach–athlete relationship has attracted growing attention from sport psychologists (Jowett & Cockerill, 2003; Jowett & Wylleman, 2006; Poczwadowski, Barott, & Henschen, 2003; Poczwadowski, Barott, & Jowett, 2006). This surge of research may be due to the recognition that the coach–athlete relationship is a crucial antecedent of athletes' optimal functioning (Jowett, 2007; Jowett & Cockerill, 2003). It thus becomes important to identify the psychological factors that allow coaches to develop high quality relationships with their athletes. It is posited that passion represents such a psychological factor. Indeed, if coaches are passionate toward coaching, this could be contributing to high quality coach–athlete relationships given that they should be entirely devoted to their athletes. Thus, the aim of this paper was to

investigate the role of coaches' passion in the quality of the coach–athlete relationship and athletes' well-being.

### The dualistic model of passion

#### The concept of passion

Vallerand and colleagues (Vallerand, 2008, 2010; Vallerand et al., 2003) have recently proposed a Dualistic Model of Passion wherein passion is defined as a strong inclination toward a self-defining activity that one loves, finds important, and invests a significant amount of time and energy. The Dualistic Model of Passion further proposed that there exist two distinct types of passion, harmonious and obsessive, which can be differentiated in terms of how the passionate activity has been internalized into one's identity. Past research has shown that values and regulations concerning non-interesting activities can be internalized in either an autonomous or a controlled fashion (Deci, Eghrari, Patrick, & Leone, 1994). Along the same vein, Vallerand et al. (2003) proposed that these two internalization processes could occur with interesting and loved

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activities. Moreover, those divergent internalization processes should determine the type of passion that will be held toward the activity. Harmonious passion refers to a strong desire to engage freely in the activity that one loves and results from an autonomous internalization of the activity into the person's identity. This process occurs when individuals have willingly accepted the activity as important for them without any contingencies attached to it. The activity is thus part of an integrated self-structure (Hodgins & Knee, 2002). In such a case, the activity occupies a significant but not overpowering space in the person's identity and is in harmony with other aspects of the person's life. Consequently, harmonious passion for an activity should not instigate conflict with one's other life domains. Moreover, to the extent that they are harmoniously passionate, individuals should show more openness and less defensiveness to what is occurring in the activity (Hodgins & Knee, 2002). Thus, people with a harmonious passion should experience positive outcomes during activity engagement (e.g., positive affect, concentration, flow).

Conversely, obsessive passion results from a controlled internalization of the activity into one's identity. This process originates from intrapersonal and/or interpersonal pressure either because particular contingencies are attached to the activity such as self-esteem, or because the excitement derived from activity engagement becomes uncontrollable. While this phenomenon leads the activity to be part of the person's identity, individuals with a predominant obsessive passion come to develop ego-invested self-structures toward the passionate activity (Hodgins & Knee, 2002). Thus, to the extent that activity engagement provides ego-affirming opportunities, individuals with an obsessive passion will engage in the activity with enthusiasm and strong interest. However, individuals with an obsessive passion do not experience their activity open-mindedly but mainly focus on contingency-relevant information and events. Consequently, obsessive passion for an activity forces individuals to engage in the passionate activity in a rigid and narrow-minded manner that is detrimental to positive experiences (e.g., negative affect, rumination). Moreover, when an activity is valued because it serves self-protective purposes, it is not easily put aside. Individuals with an obsessive passion thus experience an uncontrollable urge to engage in their activity; their passion must run its course as people come to be dependent on it. As a result, individuals with a predominant obsessive passion run the risk of experiencing conflict with other life domains and negative consequences during and after engagement in the passionate activity.

Research has provided empirical support for the passion conceptualization. Results from exploratory and confirmatory factor analyses supported the two-factor structure of the Passion Scale (e.g., Vallerand et al., 2003, Study 1; Vallerand, Rousseau, Grouzet, Dumais, & Grenier, 2006, Study 1). Furthermore, harmonious and obsessive passion have been found to be positively correlated with measures of activity valuation and of the activity being perceived as a passion. However, the two types of passion have been found to lead to different predictions with respect to various outcomes (Vallerand et al., 2003, Study 1). Harmonious passion was positively correlated with general positive affect and psychological adjustment indices (Philippe, Vallerand, & Lavigne, 2009; Vallerand et al., 2003, Study 2; Vallerand et al., 2006, Study 3) and positively associated with positive emotions and flow during activity engagement (Lafrenière, Jowett, Vallerand, Donahue, & Lorimer, 2008, Study 2; Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Study 2). On the other hand, obsessive passion has been found to be either negatively related or unrelated to indices of psychological adjustment (Lafrenière, Vallerand, Donahue, & Lavigne, 2009; Vallerand et al., 2006, Studies 3) and positively correlated with negative

affect during activity engagement (Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Study 2).

### *Passion and interpersonal relationships*

The Dualistic Model of Passion (Vallerand et al., 2003) posits that having an obsessive passion toward an activity should lead to interpersonal conflict in other life domains, whereas this should not be the case for harmonious passion. Several studies have provided support for this hypothesis. For instance, Séguin-Lévesque, Laliberté, Pelletier, Vallerand, and Blanchard (2003) showed that controlling for the amount of time that individuals engaged in the Internet, obsessive passion for the Internet positively predicted conflict with couple relationship, while harmonious passion was negatively related to conflict. Similarly, Vallerand et al. (2008, Study 3) showed that obsessive passion for being a soccer fan predicted conflict with one's romantic relationship that, in turn, predicted lower quality relationships. Conversely, harmonious passion for being a soccer fan was unrelated to conflict with one's relationship.

The above findings provide support for the Dualistic Model of Passion regarding the role of passion in interpersonal relationships experienced outside the passionate activity. Lafrenière et al. (2008) have addressed whether one's passion can influence relationships within the purview of the passionate activity. In Study 1, it was found that athletes' harmonious passion toward sport positively predicted high quality relationships with one's coach. On the other hand, athletes' obsessive passion was unrelated to various indices of relationship satisfaction with their coach. In addition, the results of Study 2, conducted with coaches, replicated Study 1's findings. Furthermore, it was found that coaches' harmonious passion toward coaching positively predicted the quality of the relationship via positive emotions experienced while coaching. Moreover, Philippe, Vallerand, Houffort, Lavigne, and Donahue (2010) have replicated the findings of Lafrenière et al. (2008) with prospective designs and with objective ratings of interpersonal relationships quality. Furthermore, Philippe et al. (2010) demonstrated the negative mediating role of negative emotions between obsessive passion and the quality of interpersonal relationships. In sum, past research demonstrated that passion matters with respect to the quality of relationships within the purview of the passionate activity with harmonious passion predicting better quality relationships than obsessive passion.

### **The coach–athlete relationship**

Over the years, the interpersonal dynamics between coaches and athletes have attracted a steady stream of theoretical and empirical research within sport and exercise psychology literature. Early attempts to conceptualize and measure the interpersonal dynamics between coaches and athletes were marked by their emphasis on coach leadership (Chelladurai, 1990) and coach behaviors (Smoll & Smith, 1989). More recently, attempts to conceptualize and measure the coach–athlete relationship include the application of motivational theoretical approaches (Mageau & Vallerand, 2003), a reversal theory framework (Shepherd, Lee, & Kerr, 2006), social exchange theories (Poczwardowski et al., 2003), interdependence theory (Jowett, 2007), and interpersonal theory (Wylleman, 2000). This sustained interest may reflect the importance that has been attached to coach–athlete relationships for effective and successful sports coaching (Lyle, 2002), as well as for athletes' and coaches' well being (e.g., Chelladurai, 1990; Jowett, 2005; Smoll & Smith, 1989). Indeed, coaches' and athletes' reciprocal respect, trust, and communication have been found to be important interpersonal factors that contribute to healthy and

successful relationships (e.g., Gillet, Vallerand, Amoura, & Baldes, 2009; Jowett & Cockerill, 2003; Poczwadowski et al., 2003; Wylleman, 2000). On the other hand, mistrust, dominance, and lack of respect were found to be factors that hinder coaches' and athletes' effectiveness and well-being (e.g., Blanchard, Amiot, Perreault, Vallerand, & Provencher, 2009; Burke, 2001; Jowett, 2003).

### The present research

The specific goals of the present research were twofold. The first objective of the present study was to test a model that described how coaches' passion influences their athletes' perceptions of the quality of their relationship with their coach and ultimately how such a relationship affects athletes' subjective well-being. This model proposes that coaches' passion toward coaching should shape the manner in which they interact with their athletes. Because it originates from a controlled internalization of the activity, obsessive passion should result in a rigid functioning directed by ego-invested structures that are based on doing well at the passionate activity (Hodgins & Knee, 2002). Given that the activity serves self-protective purposes, obsessive passion should be conducive to higher ego-involvement in the passionate activity. Past research has shown that when people are ego-involved in a task they are more likely to emit controlling behaviors toward other individuals within the task (Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982; Grolnick & Apostoleris, 2002; Grolnick, Gurland, DeCoursey, & Jacob, 2002). It thus follows that obsessively-passionate coaches should be more prone to use controlling behaviors toward their athletes such as pressuring athletes to feel or think in specific ways. On the other hand, harmonious passion derives from an autonomous internalization of the activity within one's identity. The activity is integrated and congruent with one's true self. This means that harmonious passion should lead individuals to develop a secure sense of self-worth that is not contingent on the passionate activity. Thus, to the extent that individuals are predominantly harmoniously passionate, they should be less likely to feel threatened and should show less defensiveness regarding their passionate activity. Therefore, harmoniously-passionate coaches should be more likely to emit autonomy-supportive behaviors such as taking their athletes' perspective into account, providing their athletes with a rationale for tasks, and encouraging self-initiative from athletes.

The model further suggests that coaches' autonomy-supportive and controlling behaviors should in turn influence the quality of the coach–athlete relationship as perceived by the athlete. Indeed, if an athlete feels well understood and that his/her opinions are taken into account, this should lead him/her to feel more attached to his coach. Conversely, if an athlete feels intimidated by his/her coach or if his/her coach uses conditional regard as a training practice, this should lead the athlete to feel less friendly and even angry toward his/her coach. Research has shown that autonomy-supportive behaviors from coaches promote athletes' feelings of being connected and understood by coaches (e.g., Alvarez, Balaguer, Castillo, & Duda, 2009; Gagné, Ryan, & Bargmann, 2003; Reinboth, Duda, & Ntoumanis, 2004). In addition, research with children has shown that parents' use of conditional regard, which is a form of controlling behaviors, promotes children's resentment toward parents (Assor, Roth, & Deci, 2004). Consequently, coaches' autonomy-supportive behaviors should foster better coach–athlete relationships, while controlling behaviors should be detrimental to the quality of the coach–athlete relationship.

Finally, it is hypothesized that a successful and fulfilling coach–athlete relationship should have positive consequences for athletes' subjective well-being. Indeed, Duda (2001) suggested

that the behaviors and interpersonal style of coaches play an important role in shaping the psychological effects of sport involvement on athletes. Furthermore, Mageau and Vallerand (2003) concluded that one of the most important relationships in athletes' lives is their relationship with their coach. Therefore, in line with Self-Determination Theory (Deci & Ryan, 2000; Ryan & Deci, 2007) and other need theories (see Baumeister & Leary, 1995; McClelland, 1985), which propose that positive connections with others are paramount for optimal functioning to thrive, it is proposed that a gratifying coach–athlete relationship should be conducive to higher levels of happiness in athletes.

In sum, a model was proposed and tested where coaches' harmonious passion should positively predict autonomy-supportive behaviors toward athletes which, in turn should be conducive to high quality coach–athlete relationships as perceived by their athletes. Conversely, coaches' obsessive passion should positively predict controlling behaviors, which in turn should be negatively related to the quality of the coach–athlete relationship. Finally, we believed that a satisfying coach–athlete relationship should contribute to higher levels of subjective well-being in athletes.

While past research (e.g., Lafrenière et al., 2008) provided support for the role of passion in the quality of the coach–athlete relationship, it nevertheless remains that the data relied exclusively on one's personal perceptions. Those findings did not verify if the impact of passion on relationship quality was also experienced by other individuals interacting with the passionate individual. Therefore, the second purpose of the present research was to explore the role of harmonious and obsessive passion in the quality of the coach–athlete relationships while addressing this drawback. Thus, a dyadic methodological approach involving both members of the coach–athlete dyad was used in the present study to test the model. It is believed that such a methodological strategy would allow us to more clearly determine how the coach's perspective influences their athlete's perceptions of the coach–athlete relationship as well as their ensuing subjective well-being.

### Method

#### Participants

Participants were 103 coach–athlete dyads (93 male coaches, 10 female coaches, 63 male athletes, and 40 female athletes) engaged in one of several sports (e.g., gymnastics, volleyball, football). The mean age of the coaches was 44.23 years ( $SD = 7.94$  years), while the mean age of the athletes was 22.04 years ( $SD = 5.29$  years). On average, coaches had been coaching for 15.75 years ( $SD = 12.53$  years), while athletes had been participating in their sport for 8.54 years ( $SD = 3.64$  years). The coach–athlete relationship length ranged from five months to thirteen years, with an average relationship length of 2.88 years ( $SD = 2.03$  years). Fifty-eight percent (58%;  $N = 60$ ) of dyads had both a male coach and a male athlete, 32% ( $N = 33$ ) had a male coach with a female athlete, 3% ( $N = 3$ ) had a female coach with a male athlete, and 7% ( $N = 7$ ) had both a female coach and a female athlete. The coaches classified their team level as follows: club level ( $N = 39$ ; 37.9%), county level ( $N = 5$ ; 4.9%), university level ( $N = 5$ ; 4.9%), national level ( $N = 41$ ; 39.8%), and international level ( $N = 13$ ; 12.6%).

#### Procedure

Coaches were contacted through a variety of means (e.g., e-mail, letter) and invited to participate in the study. Once the coaches consented to participate, athletes' permission was then sought. Coaches were allowed to choose any one athlete from his/her team as long as they had been training with this particular athlete for at

least 3 months. Prospective participants were informed about the general aims of the study and the requirements for participation. Each member of the dyad (i.e., coaches and athletes) who consented to participate was supplied a questionnaire. Coaches' questionnaire contained demographic questions (e.g., age, gender), the Passion Scale (Vallerand et al., 2003), and two scales assessed autonomy-supportive and controlling behaviors toward their athlete. Whereas, athletes' questionnaire contained demographic questions (e.g., age, gender), the Coach–Athlete Relationship Questionnaire (Jowett & Ntoumanis, 2004) which assessed the quality of the coach–athlete relationship as perceived by athletes, and one scale assessed athletes' general happiness. Following the instructions supplied by the test administrator, participants completed the questionnaire independently.

## Measures

### Coaches' passion for coaching

Coaches' passion was assessed using an adapted version of the Passion Scale (Vallerand et al., 2003), an instrument composed of two six-item subscales assessing harmonious and obsessive passion. The items were adapted by Lafrenière et al. (2008) to refer to the coaching domain (sample item for harmonious passion toward coaching: "Coaching is in harmony with other things that are part of me."; sample item for obsessive passion toward coaching: "Coaching is so exciting that I sometimes lose control over it."). This scale was completed on a 7-point Likert scale ranging from 1 ("not agree at all") to 7 ("very strongly agree"). All other scales presented below were completed on the same 7-point Likert scale except if specified otherwise. The Passion Scale has been used in several studies and has shown high levels of validity and reliability (see Carbonneau, Vallerand, Fernet, & Guay, 2008; Donahue, Rip, & Vallerand, 2009; Philippe, Vallerand, Andrianarisoa, & Brunel, 2009; Philippe, Vallerand, Richer, Vallières, & Bergeron, 2009; Vallerand et al., 2008), including research with coaches (Lafrenière et al., 2008, Study 2).

### Coaches' autonomy support

Coaches' autonomy-supportive behaviors toward their athletes were assessed using three items (sample item: "I provide my athlete with choices and options.") which were adapted from an instrument developed by Williams, Grow, Freedman, Ryan, and Deci (1996).

### Coaches' controlling behaviors

Based on the work of Mageau and Vallerand (2003), six items assessing coaches' controlling behaviors toward their athlete were developed (sample item: "I direct/dominate every aspect of the practice/training.").

### Athletes' perceived relationship quality

The Coach–Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004) was used to assess the athletes' perceptions of the quality of the relationship with their coach. The CART-Q measured three positive dimensions of the relationship: namely closeness, commitment, and complementarity corresponding to the affective, cognitive, and behavioral aspects of the coach–athlete relationship, respectively. Closeness is a three-item subscale that assesses the level to which the athlete trusts, respects, and appreciates the coach (sample item: "I respect my coach."). Commitment is a four-item subscale that assesses athletes' willingness and dedication to maintain the athletic partnership over time (sample item: "I am committed to my coach."). Complementarity is a four-item subscale that assesses athletes' cooperative actions (sample item: "When I am coached by my coach, I am ready to do my best.").

The CART-Q has been used in several studies and has shown high levels of validity and reliability (see Jowett, 2009; Jowett & Ntoumanis, 2004). More precisely, Jowett and Ntoumanis (2004) verified the content, predictive, and construct validity, as well as internal consistency, of the three subscales of the CART-Q. Additionally, the results of a confirmatory factor analysis supported the factorial validity of the three subscales of the CART-Q with separate, yet correlated, dimensions of high quality coach–athlete relationship. Moreover, in line with recent work on the coach–athlete relationship (Jowett, 2009; Jowett & Ntoumanis, 2004; Lorimer & Jowett, 2009), scores for each subscale were used as indicators of athletes' general perceptions of the quality of the relationship with their coach in all structural equation modeling analyses.

### Athletes' happiness

In line with prior research (e.g., Miquelon & Vallerand, 2006; Ryff, Singer, & Love, 2004; Steptoe, Wardle, & Marmot, 2005), happiness was assessed in terms of positive affect. The positive affect subscale of the short Positive and Negative Affect Schedule (PANAS; Mackinnon et al., 1999; Watson, Clark, & Tellegen, 1988) was used to assess positive affect. This instrument is composed of five adjectives assessing positive affect (e.g., enthusiastic, determined, proud). Athletes were asked to rate each item on the basis of how they felt during the past month using a 7-point Likert scale ranging from 1 ("not at all") to 7 ("extremely").

## Data analysis

All structural equation modeling analyses in the present study were performed using EQS 6.1 (Bentler, 1993). All structural equation modeling analyses were performed on a raw data file using maximum likelihood estimation procedure. Several indices were used to assess the model fit (Hu & Bentler, 1999). First, fit of the model to the data was examined using the chi-square test. A non-significant chi-square indicates that the model was able to replicate suitably the sample covariance matrix. However, there are problems with relying solely on chi-square test because this statistic is sensitive to the size of the correlations and to sample size (see Kline, 2005). Consequently, some researchers have suggested using the normed chi-square, which is the chi-square value divided by the degrees of freedom (Kline, 2005). Bollen (1989) suggested that a normed chi-square value lower than 3.0 indicates a reasonable fit to the data. Moreover, we used additional well-established fit indices to further assess model fit: the Comparative Fit Index (CFI), the Incremental Fit Index (IFI), and the Root Mean Square Error of Approximation (RMSEA). According to Kline (2005) and Tabachnick and Fidell (2007), the CFI and IFI should be .90 or higher for acceptable model fit. Moreover, the RMSEA should be .08 or lower and the 90% confidence interval should not exceed .10 for acceptable model fit (Kline, 2005). Finally, in order to contrast different models, the Akaike's Information Criterion (AIC) was computed. Within a set of competing non-hierarchical models, the one with the lowest AIC value should be preferred (Kline, 2005).

## Results

### Preliminary analyses

Missing values (representing .4% of the total data file) were replaced using a regression imputation procedure. Confirmatory factor analyses (CFA) using the robust maximum likelihood estimation method were performed to examine the factorial structure of all scales. For reasons of brevity, the results of the CFA are not presented here but are available from the first author on request. All scales were found to have acceptable model fit, except for the

coaches' controlling behaviors scale. Inspection of the loadings and modifications indices suggested the removal of three items. These items were removed leaving a total of three items for the coaches' controlling behaviors scale. The revised coaches' controlling behaviors scale had an acceptable model fit.

Inspection of the skewness and kurtosis indices for all variables proved to be normal (values ranged from  $-.996$  to  $.010$  for skewness and from  $-.813$  to  $-.329$  for kurtosis) except for the closeness and commitment subscales of the CART-Q and the positive affect scale. These variables were negatively skewed and had high kurtosis values (values ranged from  $-2.182$  to  $-1.342$  for skewness and from  $3.564$  to  $5.492$  for kurtosis). Consequently, these variables were transformed to normalize the distributions. After squared transformation failed to reduce the skewness and kurtosis of the closeness subscale, this subscale was reflected and inverted (skewness =  $-.842$ ; kurtosis =  $-.836$ ), as recommended by Tabachnick and Fidell (2007). On the other hand, the complementary subscale (skewness =  $-.643$ ; kurtosis =  $.193$ ) and the positive affect scale (skewness =  $-.717$ ; kurtosis =  $.460$ ) proved to be normal after being squared transformed. All subsequent analyses were performed on the transformed data. For ease of interpretation and presentation, the means and standard deviations of the non-transformed variables are presented in Table 1.

Data screening revealed no value higher than three standard deviations from the mean. Additionally, in order to screen for multivariate outliers, we computed Mahalanobis distance values for all participants. No participant exceeded the critical chi-square value at the  $p = .001$  level (26.13). In addition, all bivariate scatterplots were linear and homoscedastic. We also examined gender and age differences. Results demonstrated no significant main effect for coaches and athletes' gender and age or interaction effects on all variables of the present study. Thus, we did not include gender or age in the following analyses.

#### Descriptive statistics and scale reliabilities

Means, standard deviations, and Cronbach alpha coefficients for all measures are presented in Table 1. All measures had an acceptable level of internal consistency with all values above  $.70$ . The Pearson correlations between all variables are presented in Table 1. In addition, for ease of interpretation, an index of athletes' perceived quality of the relationship was created by combining the three subscales of the CART-Q. Consequently, all three subscales of the CART-Q were standardized and summed together. As expected, coaches' harmonious passion was positively correlated with coaches' autonomy-supportive behaviors. Coaches' autonomy-supportive behaviors were positively associated with athletes' scores on the CART-Q. Moreover, the CART-Q was positively correlated with athletes' happiness. Coaches' obsessive passion was positively associated with coaches' controlling behaviors. Finally, contrary to our initial hypotheses, coaches' controlling behaviors

were negatively but non-significantly related to athletes' scores on the CART-Q.

#### Main analyses

The model tested in the present study was composed of 6 latent variables: 2 exogenous variables (i.e., coaches' harmonious passion and obsessive passion) and 4 endogenous variables (i.e., coaches' autonomy support and controlling behaviors, athletes' perceived quality of the coach–athlete relationship, and athletes' happiness). As shown in Fig. 1, each latent variable had either two or three indicators. The three items of the coaches' autonomy support scale were used as the indicators of the coaches' autonomy support factor. Similarly, the three items of the coaches' controlling behaviors scale were used as the indicators of the coaches' controlling behaviors factor. In light of the relatively low number of participants and the high number of items per factor, parcels were used as indicators (see Kline, 2005) of coaches' harmonious and obsessive passion, athletes' perceived quality of the coach–athlete relationship, and athletes' happiness factors. For coaches' harmonious and obsessive passion, we computed parcels by aggregating Items 1 and 2 from their respective subscale into Parcel 1, Items 3 and 4 into Parcel 2, and Items 5 and 6 into Parcel 3. Parcels were also used for the athletes' perceived quality of the coach–athlete relationship as assessed by the CART-Q scale. We aggregated items of the closeness subscale into Parcel 1, items of the commitment subscale into Parcel 2, and items of the complementary subscale into Parcel 3. Finally, for athletes' happiness, we computed parcels by aggregating Item 1, 2, and 3 from the positive subscale of the PANAS into Parcel 1 and Item 4 and 5 into Parcel 2.

In order to test the hypothesized model, a total of 5 paths were specified: one between coaches' harmonious passion and coaches' autonomy support, one between coaches' obsessive passion and coaches' controlling behaviors, two between coaches' autonomy-supportive and controlling behaviors and athletes' perceived quality of the coach–athlete relationship, and one between athletes' perceived quality of the coach–athlete relationship and athletes' happiness. In light of the Mardia's multivariate coefficient of 18.33, corrections for non-normality were used and robust statistics are reported. The results showed that the model had an acceptable fit to the data,  $\chi^2(df = 113, N = 103) = 190.53, p < .001$ , normed  $\chi^2 = 1.69$ , and the other fit indices were acceptable, CFI =  $.91$ , IFI =  $.91$ , RMSEA =  $.08$  [ $.06$ – $.10$ ]. Results from Wald and Lagrange Multiplier tests suggested that no addition or deletion of any theoretically sound parameters could significantly improve model fit. Furthermore, the fit of the model was considered adequate in the present context, in which sample size was small and the model tested was complex (Hu & Bentler, 1995). Results revealed that all paths but one (i.e., the path between coaches' controlling behaviors and athletes' perceived quality of the coach–athlete relationship) were significant. Because

**Table 1**  
Means, standard deviations, alpha coefficients, and correlations involving all variables ( $N = 103$ ).

	<i>M</i>	<i>SD</i>	$\alpha$	2	3	4	5	6	7	8	9
Coaches' harmonious passion (1)	6.09	.68	.78	.47*	.50*	-.02	.17 <sup>†</sup>	.07	.11	.17 <sup>†</sup>	.09
Coaches' obsessive passion (2)	4.78	1.32	.87		.20*	.29*	.02	.02	-.01	.02	-.01
Coaches' autonomy support (3)	6.26	.64	.71			-.06	.21*	.26*	.34*	.25*	.12
Coaches' controlling behaviors (4)	3.17	1.28	.87				-.10	-.06	-.15	-.11	-.13
Athletes' closeness with coach (5)	6.44	.70	.93					.75*	.72*	.91*	.33*
Athletes' commitment with coach (6)	6.02	.84	.87						.70*	.88*	.38*
Athletes' complementary with coach (7)	6.20	.65	.80							.91*	.52*
Athletes' perceived quality of the relationship (8) <sup>a</sup>	.00	2.70	.90								.47*
Athletes' happiness (9)	5.81	.95	.85								

\* $p < .05$ , <sup>†</sup> $p < .10$ .

<sup>a</sup> The mean reflects a standardized score.

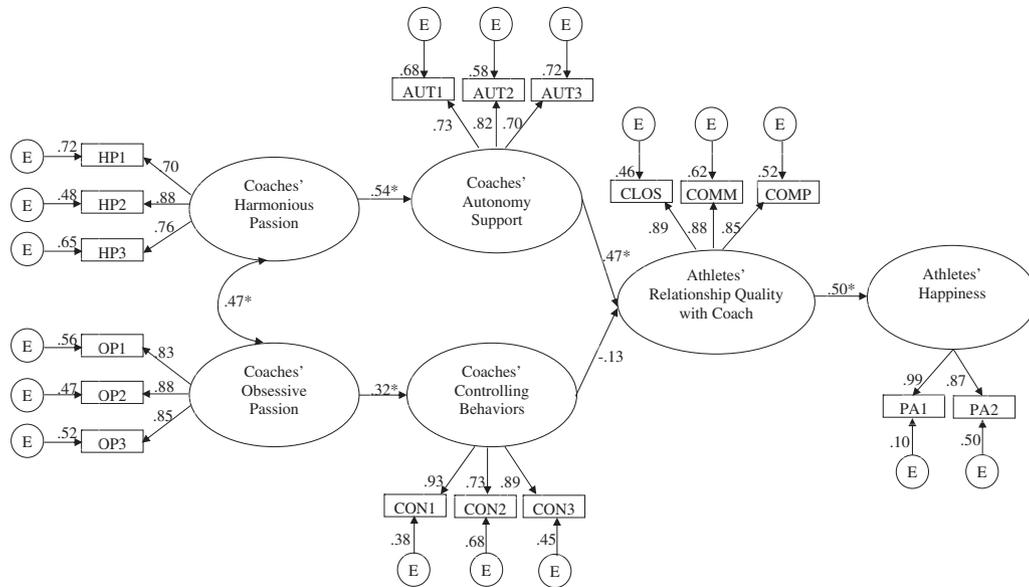


Fig. 1. Results of the structural equation modeling analyses. \* $p < .05$ .

of the non-significant association between coaches' controlling behaviors and athletes' perceived quality of the relationship, a second model, which did not include this relationship, was tested. The model fit indices remained unchanged, as shown in Table 2 (see Model 2). Moreover, a  $\chi^2$  difference test revealed that the model was not significantly different after removing this path,  $\Delta\chi^2$  ( $df = 1$ ) = -1.83,  $p > .05$ . In addition, inspection of the AIC values revealed only a trivial difference,  $\Delta AIC = -.23$ . Consequently, the initial model was kept.

As shown in Fig. 1, the results showed that coaches' harmonious passion positively predicted coaches' autonomy-supportive behaviors ( $\beta = .54$ ). Coaches' obsessive passion positively predicted coaches' controlling behaviors ( $\beta = .32$ ). In addition, coaches' autonomy-supportive behaviors positively predicted athletes' perceived quality of the relationship ( $\beta = .47$ ), which positively predicted athletes' happiness ( $\beta = .50$ ). Finally, coaches' controlling behaviors did not significantly predict athletes' perceived quality of the relationship ( $\beta = -.13$ ).

In order to test whether the hypothesized model provided the best fit indices, three meaningful alternative models were tested. These models were chosen because they were theoretically or statistically more plausible than other possible models. Wald and Lagrange Multiplier tests were also conducted and any meaningful additions or removals of parameters were executed in order to improve the probability of alternative models to fit data. The first alternative model (i.e., Model 3) was identical to Model 1 with one exception: coaches' autonomy-supportive and controlling behaviors directly predicted athletes' happiness which, in turn, predicted athletes' perceptions of the quality of the coach–athlete relationship. Based on modification indices, a path between coaches' autonomy support and athletes' perceived quality of the relationship was added. As can be seen in Table 2, this model resulted in

increased chi-square and AIC values. In addition, other fit indices were less acceptable than the initial model's fit indices.

The second alternative model (i.e., Model 4) was one in which coaches' autonomy-supportive behaviors predicted harmonious passion and coaches' controlling behaviors predicted obsessive passion. This alternative model was tested given the possibility that coaches' frequently practiced behaviors might become internalized over time, thereby leading to the development of harmonious and obsessive passion. Then, coaches' harmonious and obsessive passion predicted athletes' perceptions of the quality of the coach–athlete relationship which, in turn, predicted athletes' happiness. Based on modification indices, a covariance was estimated between coaches' harmonious and obsessive passion. As can be seen in Table 2, this model resulted in identical fit indices. However, this model resulted in a slight increased chi-square and AIC values.

The third alternative model (i.e., Model 5) was identical to Model 4 with one exception: coaches' harmonious and obsessive passion directly predicted athletes' happiness which, in turn, predicted athletes' perceptions of the quality of the coach–athlete relationship. Based on modification indices, the path between coaches' obsessive passion and athletes' happiness was removed. As can be seen in Table 2, this model resulted in increased chi-square and AIC values. In addition, other fit indices were less acceptable than the initial model's fit indices.

Overall, Model 3 was rejected given that the model had slightly less acceptable fit to the data than the initial model. Model 4 was rejected given that model was less theoretically plausible than the initial model even though fit to the data was identical. In line with past research (Deci et al., 1982; Grolnick & Apostoleris, 2002; Grolnick et al., 2002), there is compelling theoretical evidence to the effect that coaches' harmonious and obsessive passion instigate behaviors and not the opposite. Finally, Model 5 was rejected given that the model had slightly less acceptable fit to the data than the initial model. In sum, the hypothesized model was judged the most plausible model on the basis of both the data and theoretical grounds.

Table 2  
Goodness-of-fit indices of the five models.

Model	$\chi^2$	df	Normed $\chi^2$	CFI	IFI	RMSEA and CI	AIC
1	190.53	113	1.69	.91	.91	.08 [.06–.10]	-35.47
2	188.70	114	1.66	.91	.91	.08 [.06–.10]	-35.70
3	196.17	112	1.75	.90	.90	.09 [.07–.11]	-27.83
4	191.22	112	1.71	.91	.91	.08 [.06–.10]	-33.78
5	222.13	113	1.97	.87	.87	.10 [.08–.12]	-5.87

### Indirect effects

Indirect effects were investigated to further test the mediating role of coaches' autonomy-supportive behaviors between

coaches' harmonious passion and athletes' perceived quality of the coach–athlete relationship, as well as the mediating role of athletes' perceived quality of the coach–athlete relationship between coaches' autonomy-supportive behaviors and athletes' happiness. Consequently, bootstrapped confidence interval estimates of the indirect effect (see Preacher & Hayes, 2008) were calculated to confirm the significance of mediations. Bootstrapping is a statistical method that randomly constructs a number of resamples of the original sample in order to estimate parameters. In the present study the 95% confidence interval of the indirect effects was obtained with 5000 bootstrap resamples. Using bootstrap methods to estimate indirect effects is especially recommended in small-to-moderate samples (Shrout & Bolger, 2002). It should be noted that the indirect effect is significant at  $p < .05$  if the 95% confidence intervals do not include the value of zero. In the present study, the confidence interval was bias corrected given that this correction is believed to improve power and Type 1 error rates (MacKinnon, Lockwood, & Williams, 2004). Results confirmed the mediating role of coaches' autonomy-supportive behaviors between coaches' harmonious passion and athletes' perceived quality of the coach–athlete relationship ( $\beta = .26$ ; CI = .11–.44) as well as the mediating role of athletes' perceived quality of the coach–athlete relationship between coaches' autonomy-supportive behaviors and athletes' happiness ( $\beta = .24$ ; CI = .06–.37).

## Discussion

The main purpose of the present research was to test a model that described how coaches' passion influences their athletes' perceptions of the quality of their relationship with their coach as well as athletes' ensuing well-being. Results revealed that coaches' harmonious passion indirectly predicted high quality relationships through autonomy-supportive behaviors. In addition, results showed that high quality coach–athlete relationships were beneficial to athletes' happiness. Finally, coaches' obsessive passion positively predicted controlling behaviors toward their athletes. Consequently, results from the present study generally supported the proposed model with one exception (i.e., coaches' controlling behaviors did not predict the quality of coach–athlete relationships as perceived by athletes). These findings lead to a number of implications.

### *Passion and interpersonal relationships*

A first implication is that coaches' passion matters with respect to the quality of the coach–athlete relationship. Results showed that coaches' harmonious passion positively predicted the quality of the coach–athlete relationship. However, contrary to our initial hypotheses, coaches' obsessive passion was negatively but not significantly related to the quality of the coach–athlete relationships. Still, these conclusions are in line with those of past research (Lafrenière et al., 2008; Philippe et al., 2010) that found that having a harmonious passion is favorable, whereas obsessive passion is unrelated or negatively related to relationships within the passionate activity. Moreover, using a dyadic methodological approach, the present findings extend past research as it was found that the impact of the coach's passion on relationship quality does not merely take place in the head of the passionate individual (i.e., the coach) but is also experienced by other individuals as well (i.e., athletes).

### *Coaching behaviors as a mediating process*

Results revealed that coaches' harmonious passion indirectly predicted high quality relationships within the passionate activity

through autonomy-supportive behaviors. Presumably because they feel more secure and less defensive while coaching, harmoniously-passionate coaches display a more autonomy-supportive style that involves taking their athletes' perspective into account, providing their athletes with a rationale for tasks, and encouraging self-initiative from athletes. In turn, autonomy-supportive behaviors are conducive to better quality coach–athlete relationships because athletes who feel understood and respected by their coach are more prone to develop positive and strong emotional bonds toward the latter. In addition, the present findings replicate past research (Alvarez et al., 2009; Gagné et al., 2003; Reinboth et al., 2004) by showing that autonomy-supportive behaviors from coaches positively predict athletes' feelings of being connected and understood by their coach.

Conversely, results revealed that coaches' obsessive passion positively predicts controlling behaviors toward athletes. Presumably because they are ego-involved in the activity, obsessively-passionate coaches rely more on controlling behaviors toward others within the passionate activity. Moreover, those behaviors were negatively but non-significantly related to athletes' perceived relationship quality. Future research is needed in order to replicate this finding to further understand the role of autonomy-supportive and controlling behaviors in the quality of relationships. It should be noted that the present study focused on relationships between coaches and athletes. This domain represents a specific area where authority is well defined. Both coaches and athletes have specific roles to accomplish. Thus, athletes often expect their coaches to lead, direct, and make decisions (Jowett & Carpenter, submitted for publication). Coaches may therefore be presumed by athletes to be authoritative and this could explain why controlling behavior was unrelated to relationship quality. Consequently, controlling behaviors emitted by coaches could be perceived by athletes as not revealing much about how coaches respect, love, and understand their athletes. Future research is needed in order to test this hypothesis. Finally, it should be noted that the coaches' autonomy-supportive and controlling behavior scales used in the present study were unidimensional. It is, thus, possible that a multidimensional assessment of coaches' behaviors could provide a better understanding of the role of coaches' autonomy-supportive and controlling behaviors in the quality of the coach–athlete relationship. Indeed, past research (Mageau & Vallerand, 2003; Reinboth et al., 2004) has stressed the importance of assessing autonomy-supportive and controlling behaviors from a multidimensional perspective. Consequently, future research is required in order to replicate the present findings with more comprehensive assessments of autonomy-supportive and controlling behaviors such as the Coaches' Controlling Interpersonal Style Scale (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010).

### *Athletes' happiness*

The present research revealed that high quality coach–athlete relationships as perceived by athletes lead to higher athletes' happiness. These findings are in line with Self-Determination Theory (Deci & Ryan, 2000; Ryan & Deci, 2007) and Baumeister and Leary's need to belong (1995), which both propose that fulfilling relationships are conducive to higher subjective well-being because the need for relatedness is then satisfied. Of importance are the findings that revealed that coaches' autonomy-supportive behaviors were indirectly responsible for athletes' happiness through high quality coach–athlete relationships. Additionally, similar to Pelletier, Fortier, Vallerand, and Brière (2001) who have examined the impact of coaches' autonomy-supportive and controlling behaviors in athletes' persistence, the present research highlighted the significance of taking into account the role of both

types of coaches' behaviors in athletes' well-being. Indeed, in the present study, autonomy-supportive behaviors were found to indirectly influence athletes' happiness through high quality relationships, while controlling behaviors were unrelated to athletes' happiness. Clearly, these two types of coaching behaviors do not lead to mirror findings and should thus be independently assessed in future research.

Finally, the findings which showed that coaches' harmonious passion indirectly and positively predicted athletes' subjective well-being, whereas coaches' obsessive passion was unrelated to athletes' happiness extend past research (e.g., Rousseau & Vallerand, 2008; Vallerand et al., 2007) by underscoring the role of harmonious and obsessive passion in other people's subjective well-being. Consequently, it seems that passion might be not only important for one's own well-being but also for that of other close individuals with whom we interact within the passionate activity. Future research is required in order to replicate these findings and identify other psychological mediators of such effects. Moreover, it should be noted that athletes' passion was not measured in the present study. Consequently, future research is required to assess both coaches and athletes' passion in order to evaluate compatibility in the coach–athlete relationship with respect to passion (Horne & Carron, 1985; Kenow & Williams, 1999) and its consequences.

### Limitations

Some limitations should be kept in mind when interpreting the current findings. First, the correlational design used in the present study does not allow us to infer causal inferences. Therefore, it is impossible to determine the directionality of causality with respect to the proposed model. Consequently, researchers should try to replicate the present findings using experimental designs in order to clearly establish the directionality of effects. Second, the present study proposed a model in which all variables were concurrently measured. It would be important to conduct longitudinal or prospective research in order to determine the role of coaches' passion in predicting the changes in athletes' perceptions of relationship quality and well-being. Third, the sample contained a large disproportion of men and women coaches. This drawback did not permit us to investigate the issue of gender differences. Future research should look into this issue given that gender differences have been reported in the motivation literature (Deci, Cascio, & Krusell, 1975; Kast & Connor, 1988). Finally, even if assessments of both the coaches' and athletes' perspectives were used, all measures in this study were self-reported. Consequently, future research is needed in order to replicate the present findings with objective measures of quality of the relationship (e.g., the Coaching Behavior Assessment System; Smith, Smoll, & Curtis, 1979) and with judges' evaluations of coaches' behaviors.

### Conclusion

In sum, the findings from the present study suggest that coaches' passion matters with respect to the coach–athlete relationship. It appears that coaches' harmonious passion is conducive to better coach–athlete relationships than obsessive passion. Moreover, this process is mediated by coaches' autonomy-supportive behaviors and seems to contribute to athletes' subjective well-being. On the other hand, coaches' obsessive passion predicts coaches' controlling behaviors. From an applied perspective, the findings provide some insight into how coaches may enhance athletes' satisfaction and well-being. Thus, in line with Self-Determination Theory (Deci & Ryan, 2002) a coach who involves athletes in the coaching process by discussing performance goals, takes athletes' perspective into consideration, communicates accurately expectations, and shows

a true interest in athletes' life should enhance athlete's closeness and commitment toward the coach and, ultimately, increase athletes' well-being. Moreover, the data further suggest that coaches' passion has a significant impact on athletes' well-being and relationship satisfaction. Consequently, coaches should seek to coach in an open-minded and non-defensive manner (as characterized by harmonious passion) in order to help their athletes psychologically flourish. To return to the introduction, it would then appear that passionate coaches have the potential to produce high quality relationships with their athletes. Ironically, even though both harmoniously and obsessively-passionate coaches are equally devoted to their athletes, it seems that harmoniously-passionate coaches can more easily develop positive relationships with them. Future research on the processes that may foster harmonious over obsessive passion for coaching would therefore appear important from both theoretical and applied reasons.

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