

When winning is everything: On passion, identity, and aggression in sport[☆]

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ABSTRACT

Objectives: To examine the interplay between harmonious and obsessive passion and aggressive behavior in sports. It was hypothesized that players who are obsessively-passionate about basketball should report higher levels of aggressive behaviors than harmoniously-passionate players in general, and especially under self threat.

Methods: Using the Dualistic Model of Passion (Vallerand et al. (2003), *Journal of Personality and Social Psychology*, 85, 756–767) as a guiding framework, basketball players indicated their level of passion and aggression during typical basketball situations using a self-reported questionnaire.

Results: In Study 1, results demonstrated that athletes with a predominant obsessive passion for basketball reported higher levels of aggression on an aggression scale than athletes with a harmonious passion. In Study 2, harmoniously-passionate and obsessively-passionate athletes were randomly assigned to one of two conditions: self-threat and self-affirmation. We predicted that under self-threat, obsessively-passionate players should report higher levels of aggressive behavior than harmoniously-passionate players. However, no differences were expected between obsessively and harmoniously-passionate players in the self-affirmation condition. These hypotheses were supported.

Conclusions: The present findings reveal that having an obsessive passion is associated with aggressive behavior, especially under identity threat. Thus, the love for one's sport may lead to some maladaptive interpersonal behavior, especially if such love is rooted in a sense of identity that is contingent on doing well in that sport.

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Aggression is perhaps one of the most important problems in sports today (Sacks, Petscher, Stanley, & Tenenbaum, 2003). Much research has looked at aggressive behaviors in sport, trying to understand the processes underlying such an unethical behavior (see Kirker, Tenenbaum, & Mattson, 2000; Stephens, 2001; Tenenbaum, Stewart, Singer, & Duda, 1997). However, to the best of our knowledge, no research has empirically studied the role of passion in aggressive behaviors among passionate players. We believe that the concept of passion should allow us to uncover some of the processes underlying aggressive behavior in sports. Indeed, passionate athletes may be so involved in their sport that they are likely to be aggressive if victory is on the line. But is it the case? Are all passionate athletes likely to be aggressive? And, furthermore, are some

conditions more likely than others to trigger aggressive behavior in passionate athletes? The purpose of the present research was to address these questions.

A Dualistic Model of Passion

Vallerand et al. (Vallerand, 2008; Vallerand et al., 2003; Vallerand & Houliort, 2003; Vallerand & Miquelon, 2007) have recently proposed a psychological model of passion toward activities. They define passion as a strong inclination toward an activity that one likes, finds important, and in which one invests a significant amount of time and energy. In line with Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000), the model posits that people engage in different activities in order to satisfy their basic psychological needs for autonomy (a desire to feel a sense of personal initiative), competence (a desire to interact effectively with the environment), and relatedness (a desire to feel connected to significant others). Additionally, a person or an activity can be internalized into a person's identity when the person or the activity in question is highly valued and meaningful (Aron, Aron, & Smollan, 1992; Deci, Eghrari, Patrick, & Leone, 1994). Thus, it seems that an

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activity that is important and valued can help people develop a sense of identity because it makes them feel competent and self-efficacious during activity engagement. Therefore, in line with past studies, Vallerand et al. (2003) propose that when a person likes and engages in an activity on a regular basis, the representation of this activity will be integrated in the person's identity, consequently leading to a passion toward this activity. The activity has become so integrated into the person's identity that it represents a central feature of one's identity. For example, those who have a passion for playing basketball see themselves as "basketball players".

The Dualistic Model of Passion posits that different internalization processes are associated with the development of two types of passion toward an activity, namely harmonious and obsessive passion (Mageau et al., *in press*; Vallerand et al., 2003). Previous research has found that harmonious passion is the result of an activity that has been internalized in an autonomous way into identity (Vallerand et al., 2003). An autonomous internalization takes place when the person sees the activity as being important for itself without any contingencies attached to it. A harmonious passion occupies an important, but not overpowering, space in identity and is in harmony with other aspects of the person's life. Such internalization allows the person to freely engage in the passionate activity. In other words, with harmonious passion the authentic integrating self (Deci & Ryan, 2000) is at play allowing the person to fully partake in the passionate activity with an openness and mindfulness (Brown & Ryan, 2003) that lead to authentic attempts of positive and negative information integration without any defensiveness (Hodgins, Yacko, & Gottlieb, 2006). In addition, such an open perspective should prevent conflict to take place between the passionate activity and other life activities. Research has substantiated the above hypotheses. Therefore, people with a harmonious passion have been found to experience greater positive emotions both during and after engagement in the passionate activity (Vallerand et al., 2003, Study 1; Vallerand, Rousseau, Grouzet, Dumais, & Grenier, 2006, Studies 2 and 3), better concentration, absorption, and flow during activity engagement (Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Vallerand et al., 2003, Study 1), as well as subjective well-being (Rousseau & Vallerand, 2003, 2008; Vallerand et al., 2008, Study 2; Vallerand et al., 2007, Studies 1 and 2). Additionally, harmonious passion has been negatively associated with feelings of guilt, feelings of being judged by others (Mageau et al., 2005), and with conflict with other activities (Séguin-Levesque, Laliberté, Pelletier, Blanchard, & Vallerand, 2003; Vallerand et al., 2003, Study 1).

In contrast, when the activity is internalized in a controlled way in a person's identity, an obsessive passion is formed. A controlled internalization originates from intrapersonal and/or interpersonal pressure and contingencies that are attached to the activity, such as social acceptance and self-esteem, or because the sense of excitement derived from activity engagement becomes uncontrollable. When the passionate activity comes to mind, people feel like they can't help but to engage in the activity they love due to internal forces that control them. Eventually, the passionate activity takes disproportionate importance in the person's identity and creates conflict with other aspects of the person or other activities in the person's life (Séguin-Levesque et al., 2003). This occurs because with obsessive passion, ego-invested rather than integrative self-processes (Hodgins & Knee, 2002) are at play. Such ego-invested processes lead the person to react defensively (Hodgins et al., 2006) to self-relevant threatening information. As a consequence, obsessive passion has been positively related to negative emotions and feelings of guilt (Mageau et al., 2005; Vallerand et al., 2003, Study 1),

poor concentration (Vallerand et al., 2003, Study 1), increased rumination with the activity (Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Vallerand et al., 2003, Study 1), and a rigid task engagement (Rip, Fortin, & Vallerand, 2006; Vallerand et al., 2003, Studies 3 and 4). Additionally, when prevented from engaging in the passionate activity, obsessive passion has been associated with negative affect (Ratelle et al., 2004; Vallerand et al., 2003, Study 1).

The present research

According to a number of theorists (Bredemeier, 1985; Silva, 1980), aggression is divided between instrumental and reactive aggression. Instrumental aggression consists in causing a strategic nuisance to an opponent in a desire to hinder one's performance, such as a box out in basketball or a legal body check in hockey. Contrary, reactive aggression usually involves frustration or anger along with the intent to harm or injure another. The primary goal is the resultant pain or suffering of the victim. Therefore, the focus of reactive aggression is to hurt one's opponent even to the point where the injured athlete must be removed from the game. A similar definition was adopted by Baron and Richardson (1994) who operationally defined aggression in sport as '... any form of behavior directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment (p0.7)'. According to this definition, behavior may be verbal or physical and must be directed at another person rather than an inanimate object, for example throwing one's racket to the floor or kicking one's chair on his way to the bench would not be categorized as aggressive behavior, rather, they would be signs of frustration and anger. While there is an important debate on the definition of aggression in the literature (Kerr, 1999, 2002; Tenenbaum, Sacks, Miller, Golden, & Doolin, 2000), it was not the purpose of this research to focus on such a debate. For the sake of this research, we were interested in understanding the processes evolved between passion and reactive aggression only, as defined by Baron and Richardson (1994).

One outcome that has received no attention so far with respect to passion is aggression in sport. However, two studies have looked at the aggressive consequence of being passionate for an important political cause (Rip & Vallerand, 2007) and for driving (Philippe, Vallerand, Richer, Vallières, & Bergeron, *in press*). More specifically, in the study involving passionate individuals for a political cause, it was found that harmonious passion predicts the use of appropriate actions, such as making financial contributions to a political party, while obsessive passion was associated with the endorsement of radical and potentially violent actions such as subversive and sabotage behaviors (Rip & Vallerand, 2007). Therefore, it seems that being obsessively-passionate toward an important goal (or cause) can lead people to use violent behaviors to reach one's goal or cause.

Philippe et al. (*in press*) were interested in examining the relationship between passion and aggressive driving behavior in a series of three studies. First, results from all three studies revealed that an obsessive passion for driving was associated with aggressive behavior, while a harmonious passion for driving was unrelated to it. Second, findings also uncovered that these relationships held true in three types of context; in general (through the Driving Anger Expression Inventory, Studies 1 and 2), in the report of a recent real-life frustrating driving event (Study 2), and when frustrating events were induced under controlled laboratory conditions (Study 3). Finally, the results of Study 3 showed that when faced with frustrating events, anger mediated the relationship between obsessive passion and aggressive driving behavior. It is interesting to note that this latter result was obtained with both self-report and objective measures of aggression.

We further posit that these violent or aggressive behaviors are more likely to take place when one's sense of competence and identity has been threatened. Indeed, much research has shown that aggressive behavior results from threatened egotism, which represents highly favorable views of the self that are disputed by others (Baumeister, Smart, & Boden, 1996). When one's self-views are threatened, people are motivated to act aggressively in order to restore positive self-views. Thus, it would be under conditions where identity is threatened or diminished that one would be likely to react aggressively toward others in order to restore one's positive self-views (Steele, 1988). Furthermore, we propose that such an effect should be even more important for obsessively-passionate individuals. This is because the passionate activity is more central to their identity than to that of harmoniously-passionate individuals (Vallerand et al., 2003, Study 1) and because of their defensive mode of functioning. Such a defensive style leads them to be highly motivated to defend against any threat that is targeted at the self (see Hodgins et al., 2006). Such is not the case for harmoniously-passionate individuals who can face threatening information non-defensively.

Of additional importance is the fact that research has shown that when individuals have the opportunity to self-affirm (Steele, 1988) or to focus on some of their competent personal skills or abilities before having their identity threatened, then they become less defensive about the threatening information. For example, stereotypes such as those that stipulate that women are less competent in mathematics than men undermine women's identity as competent individuals and lead to overall performance decrement on different math problems. However, when women affirm a central feature of their identity (such as their excellent writing skills) before solving difficult math problems, the self-affirmation inhibits the effects of the stereotype-threat, and consequently, they perform as well as men (Steele, 1988; Steele & Aronson, 1995). One would then predict that people would be much less aggressive under self-affirming conditions. In fact, under conditions of self-affirmation, differences between the two types of passionate individuals should be much less pronounced because one's sense of identity has been secured before receiving the threatening information.

While no research has looked specifically at the above hypothesis on passion and self-affirmation, some sport research still provides support for our hypothesis. For instance, research has revealed that individuals who highly identify with their favorite team (team followers) are more likely to be aggressive toward players and coaches of the opposite team (Wann, Haynes, McLean, & Pullen, 2003), especially when their team performs poorly (Wann, Melnick, Russell, & Pease, 2001). It would appear that a team loss is experienced as a threat to the fan's identity, and therefore, fans are more likely to behave aggressively to protect or restore their identity (Branscombe & Wann, 1994). If highly identified fans, who have internalized their favorite team into their identity, use hostile aggression when their team performs badly, it would then seem possible that being an obsessively-passionate athlete can have a similar impact on one's aggressive behavior. In line with Aron et al.'s work (Aron et al., 1992), previous research has demonstrated that when the passion toward an activity is obsessive, the passionate activity takes disproportionate importance in the person's identity and creates conflicts with other aspects of the person's life (Vallerand et al., 2003). Conversely, for harmoniously-passionate individuals the activity occupies a significant space in the identity; however, it remains under the person's control and it is in harmony with other aspects of the person's life (Vallerand et al., 2003). Therefore, in line with Wann et al.' work, we believe that when the identity is threatened, athletes with an obsessive passion are more likely to behave aggressively than athletes with a harmonious passion.

The purpose of the present research was to assess the relationship between the two types of passion and aggressive behavior in sport. This basic relationship between passion and aggression was tested in two studies with basketball players. In Study 1, the type of passion athletes have toward their sport was hypothesized to influence their general aggressive behaviors. Specifically, it was hypothesized that because obsessively-passionate athletes typically hold contingent self-views, they should more readily perceive various situations as being identity threatening than harmoniously-passionate individuals and thus, should display more aggression than harmoniously-passionate players overall. Study 2 tested the hypothesis that this difference between the two types of passionate individuals is more prevalent under identity threat than under self-affirmation conditions. More specifically, it was proposed that athletes with an obsessive passion should have higher intentions to use aggressive behavior under identity threat than athletes with a harmonious passion. No difference was expected under self-affirmation condition where identity is preserved.

Study 1

The purpose of Study 1 was to assess the relationship between obsessive and harmonious passion and regular tendencies to display aggressive behaviors among men and women basketball players. In line with Rip and Vallerand (2007) and the above reasoning, we hypothesized that athletes with a predominant obsessive passion for basketball should be more likely to display aggression than athletes with an harmonious passion because they should perceive a greater number of situations as identity threatening and should be motivated to defend against such threats. Consequently, they should revert more often to aggression to restore their sense of a competent basketball player identity. Moreover, in line with past research, it was also expected that men should behave more aggressively than women (Björkqvist, 1994; Björkqvist, Lagerspetz, & Kaukiainen, 1992).

Method

Participants

Participants were 208 high school and college basketball players (men = 114; women = 94). The average age of the participants was 16.6 years ($SD = 1.59$ years). On average, these participants had been playing basketball for 6 years ($SD = 2.7$ years) and engaged in basketball for an average of 8.3 h ($SD = 4.2$ hours) per week.

Measures

The questionnaire contained scales assessing passion toward basketball, athletic aggression, and demographic questions. All scales except the demographic variables were scored on a 7-point Likert scale, ranging from 1 (*do not agree at all*) to 7 (*very strongly agree*).

Passion toward basketball. Items from the Passion Scale toward an activity were modified to measure passion for basketball (Vallerand et al., 2003). Two subscales of six items were used to assess harmonious passion and obsessive passion toward basketball. The alpha values for the present study were 0.77 and 0.85 for harmonious and obsessive passion, respectively. Items such as "Basketball is in harmony with the other activities of my life" and "I have almost an obsessive feeling for basketball" were used to, respectively, assess harmonious and obsessive passion. The Passion Scale has been used in several studies and has been found to display high levels of validity and reliability (Mageau et al., 2005; Ratelle et al., 2004; Rousseau, Vallerand, Ratelle, Mageau, & Provencher, 2002;

Séguin-Levesque et al., 2003; Vallerand et al., 2003, 2006). In addition, at the end of the Passion Scale, three items were used to assess the three passion criteria: love for the activity (i.e., I like basketball), activity valuation (i.e., Basketball is important for me), and time investment (i.e., I spend a lot of time playing basketball; Vallerand et al., 2003). In the present study, the alpha value for the three passion criteria was 0.76. These items were used to differentiate between the non-passionate and the passionate people, regardless of their type of passion (i.e., harmonious vs. obsessive passion).

Athletic aggression. Ten items from the reactive aggression subscale of the Bredemeier Athletic Aggression Inventory – Short Form (Wall & Gruber, 1986; adapted from Bredemeier, 1975) were used to assess aggression. This scale includes items such as “At times I cannot control my urge to harm an opponent”. In the present study, the alpha value for this scale is 0.80. Since its development, the Bredemeier Athletic Aggression Inventory has been used in several studies to measure athletic aggression and has been found to have good levels of validity and reliability (see Chantal, Robin, Vernat, & Bernache-Assollant, 2005; Isberg, 2000; Stephens & Bredemeier, 1996). However, some results have often proved unreliable. Inconsistencies between findings appear to be related primarily to the construction of the instrumental aggression subscale of the Bredemeier Athletic Aggression Inventory (Maxwell & Moores, 2007). Internal reliability and validity seem to be adequate for the reactive subscale, but questionable for the instrumental subscale (see Mintah, Huddleston, & Doody, 1999; Wall & Gruber, 1986). Therefore, for the purpose of this study we selected the most relevant items (10 items out of 14) of the reactive subscale only, which usually involves frustration or anger along with the intent to harm or injure other players (Bredemeier, 1985).

Demographic variables. Participants completed a demographic information section, which included questions on age, gender, school level, weekly hours they engaged in basketball, and the number of years they had been playing basketball.

Procedure

Participating teams were contacted by e-mail 1 week prior to the tournament and were invited to participate in a survey study during pre-season tournaments. Participation was voluntary. Athletes were told that the purpose of the study was to examine athlete's attitudes toward basketball. The athletes signed a consent form prior to completing the study. The athletes filled out the questionnaire individually in a quiet classroom nearby the gymnasium before their first game. After completing the questionnaire, participants were debriefed with respect to the purpose of the study.

Results and discussion

Participants were divided into obsessively- and harmoniously-passionate players according to the approach used by Vallerand and Houliort (2003). First, the three passion criteria of activity valuation, time investment, and love for the activity (Vallerand et al., 2003) were used to differentiate between the non-passionate and passionate players. Those athletes whose mean score on the sum of the three items was situated at the midpoint (4) or above on the seven-point Likert scale were considered “passionate”. Six non-passionate participants as well as 13 participants with missing values were thus excluded from the analyses. Second, harmoniously and obsessively-passionate players were differentiated by comparing their standardized scores on the two passion subscales. Players were categorized in the harmoniously-passionate group if

their harmoniously-passionate z-score was higher than their obsessively-passionate z-score. If the opposite was true, they were categorized as obsessive passionate athletes (see Vallerand & Houliort, 2003). Standardized scores capture between-subject differences and classify players in their appropriate passion group (see Koestner & Zuckerman, 1994; Mageau et al., in press for a similar procedure). In line with the Dualistic Model of Passion (Vallerand et al., 2003), this procedure is essential to distinguish between the two types of passion because they are internalized differently in one's identity and lead to different outcomes. A positive covariance was estimated between harmonious and obsessive passion because the two types of passion share common passion elements and are thus expected to be correlated, as found in previous studies (e.g., Mageau et al., 2005; Ratelle et al., 2004; Vallerand et al., 2003). In the present study, the correlation between harmonious and obsessive passion was 0.37 ($p < 0.05$).

The analyses were conducted with 189 basketball players due to the exclusion of non-passionate players and to missing values. Table 1 presents the means, standard deviations, and confidence interval of all study variables. A 2 (obsessive and harmonious passion) \times 2 (men and women) analysis of variance was used to test differences on the aggression scale.¹ Inspection of the skewness and kurtosis indices for all variables proved normal (values ranged from -0.476 to 0.104 for skewness with a standard error of 0.177 and from -0.523 to -0.299 for kurtosis with a standard error of 0.352). The results revealed the presence of a significant main effect for passion, with obsessively-passionate players ($M = 3.78$; $SD = 1.04$) reporting more aggression than harmoniously-passionate players ($M = 3.26$; $SD = 1.18$), $F(1, 185) = 7.02$, $p = 0.009$. The present results revealed a moderate Cohen's d of 0.47 for passion.² Furthermore, a main effect for gender was also obtained. Men ($M = 3.73$; $SD = 1.14$) reported higher levels of aggression than women ($M = 3.22$; $SD = 1.08$), $F(1, 185) = 5.50$, $p = 0.02$. The results yielded a moderate Cohen's effect size of 0.45 for gender. The interaction was not significant, $F(1, 185) = 0.570$, $p = 0.451$.

Overall, the results from Study 1 demonstrated that players with a predominant obsessive passion were more likely to behave with reactive aggression. These findings provide support for our hypothesis. Moreover, men were more likely to report aggressive behavior than women. This last result is consistent with past research on gender differences and physical aggression (Björkqvist, 1994; Björkqvist et al., 1992).

Study 2

Results from Study 1 suggest that athletes who have an obsessive passion for basketball are more likely to display aggressive behaviors than those who have a harmonious passion. The goal of Study 2 was to determine under which circumstances obsessively-passionate athletes are more likely to use aggressive behavior. Vallerand et al. (2003) (Study 1) showed that both types of passion are internalized in the person's identity. However, the relation between obsessive passion and identity was significantly stronger than that involving harmonious passion. This finding suggests that for obsessively-passionate individuals, the passionate activity takes on greater importance in the person's identity than for harmoniously-passionate individuals. Furthermore, as previously

¹ Analyses were performed by controlling for the participants' average practice time per week and years of experience. No differences were found in the analyses.

² Cohen (1988) defined d as the difference between the means, $M_1 - M_2$, divided by standard deviation, σ , of either group. Cohen argued that the standard deviation of either group could be used when the variances of the two groups are homogeneous.

Table 1
Means, standard deviations, and confidence intervals ($N = 189$): Study 1.

	Mean	SD	95% C.I. lower bound	95% C.I. upper bound
Harmonious passion	5.89	0.69	5.79	5.99
Obsessive passion	4.07	1.35	3.88	4.26
Reactive aggression	3.51	1.14	3.35	3.68

Note: Reactive aggression scores ranged from 1 to 7.

mentioned, obsessive passion is internalized in a controlled way into identity because the activity is associated with certain contingencies such as feelings of social acceptance or self-esteem. In line with Crocker (2002, 2004), when people have self-validation goals, mistakes, failures, criticism, and negative feedbacks are self-threats rather than opportunities to learn and improve. In domains in which self-worth is invested, the goal of obtaining outcomes that validate self-worth is paramount; learning becomes a means to desired performance outcomes that validate the self, instead of performance outcomes being opportunities for learning. For example, people tend to attribute failure to external causes, whereas they take credit for their successes (Bradley, 1978; Miller & Ross, 1975). Crocker (2002, 2004) has demonstrated that the contingencies of self-worth shape how one spends time in daily life, and that some contingencies of self-worth, particularly the external ones, have high costs for mental and physical health. It seems that the instability of self-esteem is linked to having one's self-worth dependent to external validation which creates conflict, hostility, and stress. Consequently, when a failure in domains of contingencies threatens one's identity and sense of competence during activity engagement, people try to avoid failure by increasing effort. If they are still uncertain of success, they will make excuses or change behaviors in order to deflect the threat to their self-esteem (Crocker, 2002, 2004). An additional way to eliminate the threat is to become aggressive toward the threat source. Such aggression would then restore the person's positive sense of competence and identity. It seems that the cost of competence comes not from having self-esteem that is low (or high), but rather from reacting defensively to events or feedback in ways that primarily serve to maintain, protect, or enhance self-esteem.

In line with Branscombe and Wann (1994) and Vallerand et al. (2003), we believe that athletes with an obsessive passion may feel that their identity is threatened if they fail at their passionate activity, perform poorly, or if they are unable to reach their desired goals. In other words, we believe that threatening the sense of competence attached to the passionate activity in obsessively-passionate athletes may trigger aggression. Consequently, such behavior should protect and even restore their basketball-contingent sense of competence and identity. On the other hand, we believe that harmoniously-passionate athletes should not feel threatened because they have internalized the activity in an autonomous fashion into their identity where no contingencies are expected between the person's goals or self-esteem and the activity. Thus, when put in a position that requires an aggressive behavior in order to win, they are less likely to engage in such behavior, because their identity is not on the line and they don't feel that they have to defend it.

In sum, Study 2 tested two major hypotheses. First, we expected to replicate the results of Study 1 with a different measure of aggression, namely athletes' aggressive intent in specific basketball situations. It was hypothesized that overall obsessively-passionate athletes would report higher levels of situational reactive aggression than harmoniously-passionate ones. Second, we attacked or made secure their sense of competence attached to one's identity in one of two conditions: namely identity threat (attack on one's sense of basketball competence) and identity affirmation (securing

one's sense of basketball competence). Therefore, it was expected that obsessively-passionate players in the identity threat condition would display higher levels of situational aggression compared to harmoniously-passionate players because they would want to defend against such threat and restore the integrity of their identity (Steele, 1988). Moreover, we expected to find no difference on the situational aggression between obsessively- and harmoniously-passionate players under the self-affirming condition because the player's identity is not on the line in such a situation.

Method

Participants

Participants were 60 basketball players (men = 44; women = 16), who were participating in a basketball summer camp in the Province of Quebec. Participants were all high school students, mostly from eighth and ninth grades. The average age of the participants was 14.8 years ($SD = 0.92$ years), ranging from 14 to 17 years. On average, these participants had been playing basketball for 4 years ($SD = 1.8$ years) and engaged in basketball activities for an average of 7.5 h per week ($SD = 3.4$ h).

Measures

The questionnaire contained scales assessing passion toward basketball, as well as self-threat or self-affirmation manipulations, three situational aggressive behaviors, and demographic questions. The Passion Scale and the three situational aggressive behaviors were scored on a 7-point Likert scale, ranging from 1 (*do not agree at all*) to 7 (*very strongly agree*).

Passion toward basketball. The Passion Scale used in Study 1 was also used in Study 2. In the present study, the Cronbach's alphas were 0.77 and 0.84 for the harmonious and obsessive passion subscales, respectively. Moreover, the correlation between harmonious and obsessive passion was 0.12 ($p = 0.35$).

Manipulation. Participants were randomly assigned to either the self-threat condition or the self-affirmation condition. The self-threat manipulation was designed to create a self-identity threat. On the other hand, the self-affirmation manipulation was designed to confirm (or affirm) the player's identity. Participants in the self-threat condition were asked to "Name and fully describe five of your basketball weaknesses". Participants in the self-affirmation, in contrast, were asked to "Name and fully describe five of your basketball strengths". Several lines were provided to elaborate on these five dimensions.

Situational aggressive behavior. Three hypothetical basketball situations were used to assess situational aggression under conditions that highlighted the possibility of being an incompetent basketball player. Therefore, three hypothetical situations were developed in order to capture players' intention to use aggressive behaviors in real basketball situation. Each situation was composed of four items that were constructed so as to convey a linear increase in athletes' intention to use aggression.

Situation 1: There are 2 s left in an important game. Your team is winning by one point. The other team shot the ball and there is a rebound. An opponent is just about to make a "tip in" and win the game. You are under the basket and nobody is looking at you (not even the referees) because all eyes are turned toward the opposing player. What are you doing to the opposing player?

Four items were used for this game situation: (1) "I let him (her) shoot"; (2) "I try to break his (her) concentration by screaming"; (3) "I

touch him (her) slightly and hope that it will be enough to make him (her) miss"; and (4) "I clip his (her) legs and act as if it was a box out".

Situation 1 has been found to display good levels of validity and reliability in a pilot study (Donahue & Vallerand, 2008) as it was positively correlated with the reactive aggression subscale ($r = 0.46$). Two new situations were created in order to understand the athletes' behavior in a similar context. The situations were the following:

Situation 2: During the try-out for your high school team, you are competing against another player to have a spot on the team. Suddenly, your coach decides to do an exercise to evaluate the "man to man" defense of each player. However, during the exercise, the other player (the one against whom you compete for a position on the team) pushes you voluntary on the floor to free himself from your defense, while your coach has his back turned. What do you do to this player?

Four items were used for this situation: (1) "I get up and continue do to the exercise without saying anything"; (2) "I ask him (her) with an aggressive tone: What is your problem?"; (3) "I push him (her) a little bit with a furious look"; and (4) "I wait later during another exercise to give him (her) a strong and subtle blow with my elbow when the coach does not look".

Situation 3: You are doing very well in the basketball summer camp, and your team counts on you to win the Finals. However, the opposing team has another plan in mind and wants to stop you from playing well. The player who is guarding you is always holding your jersey, holding your arm, and he is preventing you from going where you want to go. Obviously, there are no referees during the game because it's a summer camp. However, your opponent takes advantage of this situation to foul you all the time and prevents you from playing well. How do you react?

Four items were used for this summer camp situation: (1) "I let him (her) do it and I continue to play no matter what"; (2) "I ask my teammates to make better screens for me"; (3) "I push him (her), foul him (her) and hold him (her) too"; and (4) "I hit him (her) strongly in the stomach so he (she) can not play anymore".

To further validate the situational aggressive behavior scale, we asked 39 basketball players, in a pilot study (Donahue & Vallerand, 2009), to rate the four items of each situation on a 4-point scale (1 being the lowest level of aggression and 4 being the highest). Four variables were created representing the average response of each of the four items for the three situations. A repeated measure ANOVA was conducted on the average score of each item. The results revealed that the level of perceived aggression increased significantly from item 1 ($M = 1.09$, $SD = 0.28$) to item 2 ($M = 2.41$, $SD = 0.38$), from item 2 to item 3 ($M = 2.68$, $SD = 0.27$), and from item 3 to item 4 ($M = 3.79$, $SD = 0.37$), $F(3, 114) = 340.44$, $p < 0.001$. These results of the pilot study underscored the presence of a significant linear trend in aggression from item 1 to item 4.

In the present study, in order to create a total score reflecting this linear increase in aggression, an index was created by having each item multiplied by a weight ranging from +1 (item 1) to +2 (item 2), +3 (item 3), and to +4 (item 4). All four scores of a given situation were then summed. Finally, to create an average score of the three situations, the total index of the three situations was summed and divided by three. The cumulative situational aggression index ranged from 10 to 70. The higher the total index, the higher the level of situational aggression. An overall Cronbach's alpha of 0.65 was obtained for this index in the present study.

Demographic variables. Participants completed a demographic information section with questions regarding their age, gender,

education, weekly hours of practice, and the number of years they have been playing basketball.

Experimental design

Each participant was randomly assigned to either the self-threat or self-affirmation conditions creating the between-subjects design 2 (obsessive vs. harmonious passion) \times 2 (self-threat vs. self-affirmation). The obsessive vs. harmonious groups were created according to the same procedures used in Study 1.

Procedure

An agreement with the Quebec Basketball Federation was made prior to the basketball camp. Participation was voluntary. Players were told that the purpose of the study was to examine athlete's attitudes toward basketball. The players signed a consent form before completing the survey. The questionnaires were randomly distributed by the experimenter during the second day of camp. Participants completed the questionnaire in small groups in a supervised quiet classroom. After completing the questionnaire, participants were debriefed as to the purpose of the study.

Results

Table 2 presents the means, standard deviations, and confidence interval of all study variables. A 2 (obsessive vs. harmonious passion) \times 2 (self-threat vs. self-affirmation) analysis of variance was conducted on the average score of the three situational aggressive behaviors.³ Inspection of the skewness and kurtosis indices for all variables proved normal (values ranged from -0.631 to 0.115 for skewness with a standard error of 0.309 and from -1.037 to 0.281 for kurtosis with a standard error of 0.608). The results revealed the presence of a significant main effect for passion with obsessively-passionate ($M = 36.97$, $SD = 8.60$) players having a higher score than harmoniously-passionate players ($M = 31.26$, $SD = 7.46$) on situational aggression, $F(1, 56) = 8.94$, $p = 0.004$. This main effect yielded a large Cohen's effect size of 0.71 for passion. More importantly, the results also revealed a tendency toward significance in the Conditions \times Passion interaction, $F(1, 56) = 3.85$, $p = 0.055$ (see Fig. 1). Simple effect analyses revealed that obsessively-passionate players ($M = 38.49$, $SD = 8.49$) had significantly higher scores than harmoniously-passionate players ($M = 28.40$, $SD = 7.98$) in the self-threat condition, $F(1, 29) = 10.49$, $p = 0.003$. However, there were no differences under the self-affirmation condition between the obsessive ($M = 35.80$, $SD = 8.76$) and harmonious ($M = 33.71$, $SD = 6.23$) passionate groups, $F(1, 29) = 0.62$, $p = 0.44$. A moderate Cohen's effect size of 0.40 was obtained for the interaction. Finally, no gender differences were found in this study ($p > 0.12$).

Discussion

As predicted, results from Study 1 were replicated in Study 2. Specifically, obsessively-passionate players were more likely to report aggressive behaviors than harmoniously-passionate players in three hypothetical situations which they are likely to encounter on a regular basis. Furthermore, when the identity of obsessively-passionate athletes was threatened, they displayed higher levels of situational aggressive behaviors than harmoniously-passionate athletes. This pattern of results suggests that when experiencing a threat to their basketball-contingent sense of competence and identity, obsessively-passionate players reacted aggressively in

³ Analyses were performed by controlling for the participants' average practice time per week and years of experience. No differences were found in the analyses.

Table 2
Means, standard deviations, and confidence intervals ($N = 60$): Study 2.

	Mean	SD	95% C.I. lower bound	95% C.I. upper bound
Harmonious passion	5.63	0.82	5.40	5.83
Obsessive passion	3.40	1.39	3.02	3.75
Situational aggression	34.16	8.49	31.95	36.38

Note: Situational aggression scores ranged from 10 to 70.

order to restore their threatened identity. However, this difference between the two types of passionate players vanished under self-affirming conditions. It would thus appear that in line with Steele (1988), the opportunity to self-affirm allows people to protect their identity, thereby reducing the need to display aggression.

General discussion

The purpose of the present research was to assess the role of passion in aggressive sport behavior. In line with past research on passion (Rip & Vallerand, 2007; Vallerand et al., 2003, 2006) and on aggression in sport fans (Branscombe & Wann, 1994), it was hypothesized that athletes with an obsessive passion would be associated with higher levels of aggression than athletes with a harmonious passion. This hypothesis was supported in both studies. Furthermore, Study 2 sought to explore the role of identity in passionate athletes on situational aggressive behavior using the self-threat and self-affirmation paradigm (Steele, 1988). As expected, we found that obsessively-passionate players displayed higher levels of situational aggressive behavior than harmoniously-passionate players under self-threat, while in the self-affirmation condition no differences were found between obsessively-passionate and harmoniously-passionate athletes. These findings suggest a number of conclusions.

A first conclusion is that, overall, obsessively-passionate athletes tend to be more aggressive than harmoniously-passionate athletes. The same results were found in both studies thereby providing empirical evidence that obsessive passion is more likely to be conducive to aggressive behavior than harmonious passion. More specifically, in Study 1, athletes with an obsessive passion scored

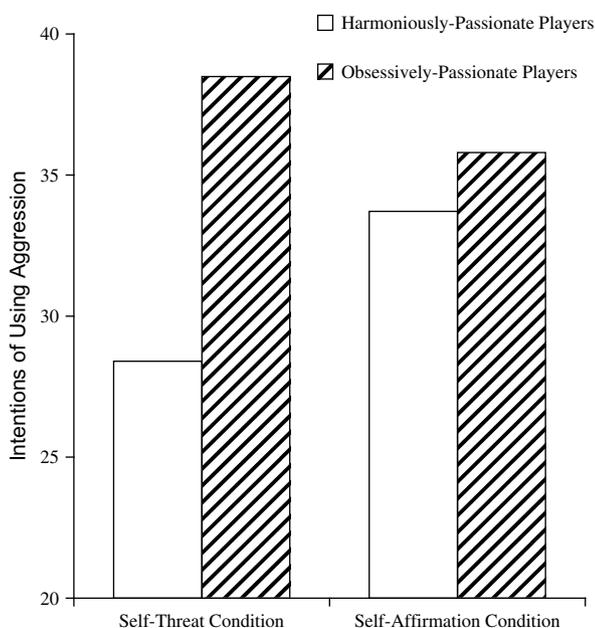


Fig. 1. Intentions of using aggressive behaviors as a function of passion (obsessive vs. harmonious) and conditions (self-threat vs. self-affirmation): Study 2.

higher on a general aggression scale (Bredemeier, 1975) than athletes with a harmonious passion. In Study 2, findings demonstrated that obsessively-passionate athletes displayed higher levels of situational aggression overall than harmoniously-passionate ones in various basketball situations. It would thus appear that obsessive passion toward an activity one deeply cares about puts the individual at risk of reacting defensively to protect one's sense of self and, consequently, when the situation demands it, to behaving aggressively.

A second conclusion is that the present findings help us better understand when, in contexts such as sports, some individuals may display more aggressive behavior than others. As the present findings show, athletes with a predominant obsessive passion were more likely to use aggressive behavior in the presence of self-threat than athletes with a harmonious passion. Indeed, in Study 2, obsessively-passionate athletes appeared to protect their vulnerable identity by acting aggressively toward others who threatened their identity as a competent athlete. Vallerand et al. (2003) found that for obsessively-passionate individuals the passionate activity occupies an overpowering place in their identity. It is thus not surprising that these athletes are willing to do almost anything to preserve their identity as competent basketball players, including injuring other players who pose a threat to this crucial aspect of their identity. The findings of both studies which suggest that obsessively-passionate athletes are typically more aggressive than those who are harmoniously-passionate (Studies 1 and 2) and that such a difference only emerges under self-threat and not under self-affirming conditions clearly suggest that obsessively-passionate individuals may more readily perceive their identity to be threatened (perhaps even under benign situations) than harmoniously-passionate athletes. This is in line with our hypothesis that obsessively-passionate individuals display a defensive mode of functioning. Of interest, are the findings that revealed that such a difference between the two types of passionate individuals vanished under self-affirmation procedures (Steele, 1988). These last results suggest that it may be possible to reduce the level of aggression of obsessively-passionate individuals by using self-affirmation procedures. Future research on this issue may lead to theoretical and applied benefits.

As expected, aggressive behaviors were less likely to be found with harmonious athletes in the presence of self-threat. It seems that athletes with a harmonious passion are less likely to engage in unnecessary aggressive behavior. This is likely due to the fact that these individuals display a non-defensive and open mode of functioning (Vallerand et al., 2003). Therefore, they do not feel pressured to protect their identity at all costs. The main goal for harmoniously-passionate athletes is to master their skills instead of focusing on the end result (win or lose) (see Vallerand et al., 2008, Study 2; Vallerand et al., 2007, Study 2). Moreover, harmonious passion has been associated with a more flexible task engagement during the activity (Mageau et al., 2005; Vallerand et al., 2003, Study 1). They are thus more likely to focus on the activity and to ignore the threat directed at their identity. Thus, when their image as a competent athlete is on the line, harmoniously-passionate athletes do not feel threatened and they do not engage in defensive behavior that could prove dangerous to others. These findings further suggest that harmoniously-passionate athletes should be likely to display high levels of sportspersonlike behavior (e.g., Vallerand, Deshaies, Cuerrier, Brière, & Pelletier, 1996) perhaps even under conditions where victory is on the line. Future research is needed in order to test this hypothesis.

The present research has some limitations. First, both studies relied exclusively on self-report data. Thus, one may question the extent to which the athletes' intentions to display aggressive behaviors would correspond to their actual behavior. It would be

important to replicate the present findings by using objective measures of aggression during a real game situation, or with more objective measures completed by coaches or referees. Second, no control group or manipulation checks were included in Study 2. It would be important to replicate the manipulation by using a control group. Moreover, results of Study 2 should be interpreted with caution due to the relatively low reliability of the aggression index (alpha of 0.65). Third, our sample in Study 2 was limited in number. This could explain why the gender differences obtained in Study 1 were not replicated in Study 2 where only 60 athletes (including 16 women) participated. While past research has demonstrated that in threatening situations, men and women are equally aggressive (Bettencourt & Kernahan, 1997), future research is needed to replicate the present findings with a larger sample. Finally, one should note that only Canadian basketball players were used in the present research. Future research is needed to examine whether our results replicate with other sports, playing levels, and cultures.

In sum, the present research represents the first effort to look at the role of passion in aggression in sport. The present findings reveal that the love for one's sport may lead to some maladaptive aggressive behavior, especially if such love is rooted in a sense of identity that leads one to react defensively in order to protect the self. Additional research on the role of passion in sport aggression would thus appear promising.

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