

Understanding the Cognitive and Motivational Underpinnings of Sexual Passion From a Dualistic Model

Frederick L. Philippe, Robert J. Vallerand, Léa Bernard-Desrosiers, Valérie Guilbault, and Guillaume Rajotte
University of Quebec at Montreal

Sexual passion has always been conceptualized as a one-dimensional phenomenon that emerges from interactions with partners. Drawing from the literature on passionate activities, sexual passion was defined in terms of its intrapersonal motivational and cognitive components and examined from a dualistic perspective. More specifically, in 5 studies, we investigated how 2 types of sexual passion, harmonious and obsessive, can lead to clearly distinct subjective, relational, and cognitive outcomes. Study 1 validated a scale measuring harmonious and obsessive sexual passion, and showed that each type of sexual passion leads to common, but also distinct, subjective consequences during sexual activity engagement for both singles and romantically engaged individuals. Studies 2 and 3 differentiated the constructs of harmonious and obsessive sexual passion from competing constructs existing in the literature and provided evidence for its predictive validity regarding various relational outcomes, including relationship sustainability over time. Finally, Studies 4 and 5 investigated the cognitive consequences of each type of sexual passion by showing how they reflect distinct levels of integration of sexual and relational representations, and how they can lead to biased processing of sexual information (Study 4) and conflict with ongoing sex-unrelated goals (Studies 5a and 5b). Overall, the present series of studies provides a new look at sexual passion from a motivational and cognitive intrapersonal perspective that is not restricted to interpersonal ramifications with partners.

Keywords: sexual passion, mental representations, romantic relationships, sexuality

Sexual passion is usually recognized as an important component of adult life and of romantic relationships (e.g., Granvold, 2001). The term *sexual passion* may at first appear rather basic and straightforward, as it is frequently used by laypeople. However, in personality and social psychology, sexual passion has often been used interchangeably with terms such as passion, passionate love, sexual desire, or physical attraction. In addition, most authors have defined it from an interpersonal perspective. One of the most common definitions of passion in a romantic relationship comes from Hatfield, which she coined “passionate love” and defined as a “state of intense longing for union with an other” (Hatfield & Walster, 1978, p. 9). Building on that definition, Vohs and Baumeister (2004) suggested that sexual passion is not stable, but an ephemeral phenomenon that momentarily builds up along increased feelings of intimacy (also see Sternberg, 1986, on this topic). However, sexual desire and physical attraction

can exist without passionate love, and passionate love is possible without sexual desire (Baumeister & Bratslavsky, 1999; Diamond, 2003). In other words, sexual attraction and desire are not synonymous with romantic love (Meyers & Berscheid, 1997). In order to take this distinction into account, Sternberg (1986) defined passion within relationships as a drive that leads to romance, physical attraction, sexual consummation, and related phenomena. He noted that passion could also exist in nonloving relationships, such as in one-night stands or relationships with prostitutes, which most often involve a minimization of intimacy and love (Sternberg, 1986). Other authors opted for a stricter definition of sexual passion, defined as an intense physical attraction to a partner accompanied by intense emotional and sexual arousal (e.g., Davis, Shaver, & Vernon, 2004).

These definitions and conceptualizations share a common assumption: Sexual passion emerges from the interdependent dynamics experienced with a partner and typically follows a unidimensional continuum of intensity, ranging from high to low levels. In the present article, we propose to revisit the basic personal motivational and cognitive components of sexual passion and investigate how sexual passion takes its roots within (instead of between) individuals. Based on passionate activities theories (e.g., Vallerand, 2015), we take the perspective that sexual passion is the felt motivation that can lead one to engage in sexual activities that may be performed individually or with one or more individuals. In addition, we specify that two types of sexual passion exist, each developed from a specific cognitive organization that depends on

This article was published Online First December 12, 2016.

Frederick L. Philippe, Robert J. Vallerand, Léa Bernard-Desrosiers, Valérie Guilbault, and Guillaume Rajotte, Department of Psychology, University of Quebec at Montreal.

We would like to thank Serge Lecours for his comments on Study 4.

Correspondence concerning this article should be addressed to Frederick L. Philippe, Department of Psychology, University of Quebec at Montreal, P.O. Box 8888, Station Centre-Ville, Montreal, Quebec H3C 3P8, Canada. E-mail: philippe.frederick@uqam.ca

how sexual representations have been internalized, and each leading to dramatically different subjective, relational, and cognitive consequences. This distinct conceptualization provides a more fundamental understanding of the motivational and cognitive underpinnings of sexual passion, while still addressing how passionate romantic love with a partner can emerge. It also extends the classical single-dimension conceptualization of passion by introducing that two types of passion exist.

From Passion for Activities to Sexual Passion: A Dualistic Model

In the literature on passionate activities, passion is defined using affective, cognitive, and behavioral criteria. To be passionate about an activity entails that the person has a high inclination toward engaging in the activity and experiences a strong positive emotional connection with the activity. Cognitively, the person highly values and finds engaging in the activity important. Finally, passion leads people to pursue the activity with energy on a long-term basis (Vallerand, 2010). Passion can therefore be defined as a strong inclination for a self-defining activity that one loves and highly values, and to which one devotes time and energy (Vallerand, 2010; Vallerand et al., 2003). For instance, passion for an activity, such as playing the guitar, is a strong motivational inclination toward playing the guitar that one loves to do, that is important, and to which one devotes time and energy. Thus, passion is the motivational component leading one to engage in the beloved activity (guitar playing) whose form may differ (i.e., solitary vs. dyadic or in a group).

We suggest that the same conceptualization can be applied to the sphere of sexuality because a sexual passion should be reflected by people's strong emotional connection with sex, high valuation of it, and frequent engagement in sexual activities. Sexual passion can therefore be defined according to the same criteria, that is, as loving sex, valuing it, and as spending a significant amount of time and energy in various sex-related activities. Some people may have a stronger inclination toward sexuality than others, and people may engage in sexual activities alone, with a long-term partner, only once with a partner, or have several partners at the same time. These instances are all representative of behaviors that are energized or motivated by sexual passion. Sexual passion is therefore a specific person-sexuality interface that is unique to each person (Vallerand, 2015). This definition of passion permits description of the concept of sexual passion in terms of a motivational drive that can vary in intensity, that is not restricted to the interpersonal ramifications occurring with a partner, and that can lead to various kinds of behaviors, including both sexual and relational behaviors, but also nonpartnered sexual behaviors.

The literature on passionate activities has also highlighted that two types of passion exist—harmonious and obsessive passion (Vallerand, 2015; Vallerand et al., 2003). In both cases, people are passionate for their activity as per the criteria defined above. However, harmonious passion comes from an autonomous internalization of the activity (Vallerand, 2015). Such an internalization takes place when the person has freely chosen and internalized the norms, values, and beliefs related to the passionate activity in a way that is well integrated and in harmony with the person's other self-aspects (Deci & Ryan, 2000; Vallerand et al., 2003). In the case of sexuality, the person would have chosen to internalize the norms, values, and scripts related to sexuality that fit his or her

broader self, such as what type of sexual activities should be engaged in, how they should be performed, and how sexuality should be expressed and should define oneself. As a consequence, the aspects of the activity can be well integrated and are in harmony with the other self-aspects of the person. Individuals with a harmonious sexual passion (HSP) therefore have mental representations about sexuality that are complexly intertwined and well integrated with other related self-aspects and life spheres, such as relational self-aspects (Mikulincer & Shaver, 2007).

Such a mental organization leads to important subjective, relational, and cognitive consequences. Because of its important integration with other types of mental representations, whenever external stimuli activate a sexual representation, the activation can freely spread to a large number of other nonsexual representations and engage complex and rich systems of goals (Kruglanski et al., 2002), which can potentially attenuate the strength of activation through a fan effect (Anderson, 1983). Sexuality is therefore subjectively experienced as integrated, thereby creating minimal conflict with other self-aspects and life spheres. Individuals with HSP can therefore fully engage in their passionate activity with flexibility and in an open, nonconflicting, and nondefensive way, which facilitates positive cognitive and affective experiences during the activity. Sexuality therefore contributes to the experience of positive sexual outcomes, such as sexual satisfaction, but also to the development of constructive relational outcomes should the sexual activities be engaged with others (Vallerand, 2015).

Conversely, an obsessive passion comes from a controlled internalization of the passionate activity, which occurs when norms, beliefs, values, and contingencies related to the activity have been imposed on the person by the social environment and are not fully self-endorsed. Therefore, these contingencies cannot be well integrated with the person's other self-aspects and, as a consequence, they remain in isolated cognitive networks, detached from more complex and integrated networks of the integrated self. When obsessive sexual passion (OSP) is at play, whenever a sexual representation is activated, the activation mostly spreads to other sexual representations. Activation therefore remains circumscribed to limited mental areas with strong activation strength (Anderson, 1983), which only engage sexual-related goals (Kruglanski et al., 2002), which are likely to lead one to seek immediate satisfaction. This prevents delay of gratification and engages little inhibitory processes when situations would require them to be in operation. Consequently, sexuality is subjectively experienced as imposing itself on the person, which is felt as an internal pressure to engage in the beloved activity. Although people love engaging in the activity, they cannot engage in their passionate activity with flexibility and full openness, which limits the range of positive cognitive and affective experiences during the activity and can even lead to the experiences of negative emotions (Philippe, Vallerand, Houliort, Lavigne, & Donahue, 2010). Because only sexual representations are mobilized whenever one is triggered, situations that only allude to sexuality are inexorably perceived as fully sexual. The mere presence of sexual stimuli should therefore bias judgment and information processing and disrupt attention, therefore conflicting with ongoing goals, and lead to rumination and intrusive sexual thoughts (Vallerand et al., 2003) and conflict with other life spheres (Houliort, Philippe, Vallerand, & Ménard, 2014; Vallerand, Paquet, Philippe, & Charest, 2010).

Research on passionate activities in general has developed a scale assessing harmonious and obsessive passion, and has supported its factorial structure and shown its invariance as a function of language (French and English), gender, and types of activity (e.g., Marsh et al., 2013; Vallerand, 2015). Harmonious and obsessive passions are typically weakly positively correlated with each other (Marsh et al., 2013). This is because passion is not an all-or-none process. People can have internalized most of the aspects of an activity in an autonomous fashion (e.g., sexuality with a partner), although some might have been internalized in a controlled way (e.g., pornography), leading to a predominant harmonious passion, which can still exhibit some obsessive-like behaviors whenever the more controlled aspects are triggered. Research has also shown that harmonious passion is predicted by a general autonomous internalization, that is, with a typically autonomous way of internalizing tasks and activities in general, whereas an obsessive passion is determined by a general controlled internalization (Vallerand, Rousseau, Grouzet, Dumais, & Grenier, 2006; see also Vallerand, 2015). In addition, harmonious passion typically leads people to experience flow (Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Vallerand et al., 2003) and positive emotions (Philippe et al., 2010; Przybylski, Weinstein, Ryan, & Rigby, 2009) during activity engagement, and facilitates engagement in the passionate activity with flexibility and in a nondefensive way (Vallerand et al., 2003). Conversely, with obsessive passion, activity engagement is characterized by the experience of some positive emotions, such as pride and excitement (Vallerand et al., 2008), and some flow (Mageau et al., 2005), but also negative emotions (Philippe et al., 2010; Vallerand et al., 2006), ill-advised behaviors during the activity (Rip, Fortin, & Vallerand, 2006; Vallerand et al., 2003, 2008), aggression (e.g., toward other players in passion for basketball [Donahue, Rip, & Vallerand, 2009], and toward other drivers in passion for driving [Philippe, Vallerand, Richer, Vallières, & Bergeron, 2009]), and ruminations and intrusive thoughts related to the activity (Forest, Mageau, Sarrazin, & Morin, 2011; Vallerand et al., 2008).

Related Constructs

Passion extends self-determination theory and the concept of self-determined motivation, in that two qualitatively distinct types of enjoyable and intrinsic engagements are posited in the dualistic model of passion (Vallerand, 2015), whereas self-determination theory proposes that all intrinsically interesting activities are internalized the same way, in an autonomous fashion (Deci & Ryan, 2000). Further, although passion for an activity is, by definition, important for the person, intrinsic motivation may be important or not (see Vallerand, 2015). Finally, contrary to self-determination theory, one type of intrinsic engagement (obsessive passion) is expected to, and has been found to, lead to negative outcomes. Passion also differs from extrinsic motivation, as the latter refers to the motivation to engage in nonenjoyable activities (Deci & Ryan, 2000), whereas passion involves activities that the person deeply loves and finds intrinsically enjoyable. Empirical investigations have also consistently shown that passion and self-determined motivation, although correlated, are two distinct constructs with unique predictive value (e.g., Houliouf et al., 2014; Vallerand et al., 2003).

Passion is also distinct from sexual desire or sexual drive. First, people with high sexual desire may or may not enjoy sex, find it

important, or engage frequently in sexual activities (Baumeister, Catanese, & Vohs, 2001; Levine, 2003). Thus, although high sexual desire probably facilitates the development of a sexual passion, there is no full overlap between those constructs. Second, we suggest that two types of sexual passion exist, whereas sexual desire has always been defined as a one-dimensional continuum. For instance, Levine (2003) defines passion as residing at the high end of a continuum of sexual desire. Sex researchers have considered a distinction between solitary and dyadic forms of sexual desire (e.g., Goldey & van Anders, 2012), but we suggest that both types of sexual passion can be expressed with a partner or not, and that both rather emerge from an intrapersonal drive.

Finally, from a clinical perspective, sexual compulsivity, defined as repetitive, continued sexual behaviors that cause clinical distress and impairment, is not sexual passion (Kafka, 2010), which implies frequent engagement in sexual activities but not distress. Both HSP and OSP are rather expected to be associated with an enjoyment of sexual activities, whereas sexual compulsivity should not. The notion of sexual compulsivity is still a much debated issue, with some even questioning its existence (e.g., Steele, Staley, Fong, & Prause, 2013). We believe that if frequent sexual engagement does not cause marked distress, but rather pleasure and enjoyment, then it is not compulsivity, and it is sexual passion—either HSP or OSP. Furthermore, the present dualistic model of passion provides a strong theoretical model to explain the development and origins of a sexual passion, whereas writings on sexual compulsivity have remained fairly atheoretical. In sum, our conception of sexual passion is novel and distinct from other related existing constructs.¹ In the present article, we provide empirical evidence for the discriminant validity of sexual passion with respect to several other constructs.

The Present Research

Drawing from research on passionate activities (Vallerand, 2010, 2015), the overarching purpose of the present research was to investigate a dualistic model of sexual passion and its subjective, relational, and cognitive consequences. Such a model focuses on the motivational and cognitive underpinnings of two different types of sexual passion, namely, HSP and OSP. Further, the model posits that sexual passion can be experienced either as a single or in a romantic couple, and thus can lead to both intra- and interpersonal outcomes. Finally, in line with the dualistic model of passion, it is hypothesized that HSP typically leads to more adaptive outcomes than OSP. To achieve this purpose, the present article reports the results of five studies that sought to test the basic premise of the model and the consequences of each type of sexual passion on subjective, relational, and cognitive consequences. More specifically, three objectives are sought in the present research within five studies:

1. Develop a dualistic Sexual Passion Scale derived from past research on passionate activities and examine the subjective consequences of each type of passion during sexual activity engagement (Study 1).

¹ There is also empirical evidence showing that sexual passion differs from all those other constructs. Contact the first author for the detailed results.

2. Examine the convergent and discriminant validity of a dualistic model of sexual passion, compared with various existing constructs in the literature, in predicting important relational consequences (Study 2), including relationship sustainability over time (Study 3).
3. Investigate the cognitive consequences of each type of passion, including the cognitive organization of their sexual mental representations. Accordingly, Study 4 will test the cognitive organization underlying each type of passion by examining the level at which sexual representations are integrated with relational representations. Studies 4 and 5 will also investigate the distinct cognitive consequences of each type of passion in biasing information processing (Study 4) and conflicting with sex-unrelated goals (Studies 5a and 5b).

Study 1: On the Construct of Sexual Passion

A primary purpose of Study 1 was to test the validity of the construct of sexual passion from a dualistic perspective. We first developed a scale to assess both types of sexual passion and examined its factorial validity as well as its invariance with respect to gender and relationship status (single or in a couple). Past research on the Passion Scale has shown an invariance of the scale with respect to gender (Marsh et al., 2013). However, studies have consistently shown that males report a higher sex drive than females (e.g., Baumeister et al., 2001). Therefore, it seemed fair to also expect a gender difference on the construct of sexual passion. Invariance was expected for relationship status, as we hypothesized that our concept of sexual passion exists at an intrapersonal level and that having a partner is not a *sine qua non* condition to express sexual passion.

A secondary purpose of Study 1 was to test how each type of passion relates to the passion criteria and to various intrapersonal subjective states experienced during sexual activities. The two types of sexual passion (i.e., harmonious and obsessive) were hypothesized to correlate similarly with the passion criteria of loving sex, valuing it, and spending time and energy on sexual activities (Vallerand et al., 2003). In addition, each type of passion should be leading to some common, but also distinct, intrapersonal subjective consequences. In line with past research on passionate activities (Vallerand, 2015), because HSP reflects a strong integration of sexuality in the person's self, it was hypothesized that sexual activities should be experienced with a sense of volition, which should be associated with a wide range of positive emotional and cognitive experiences, such as positive emotions and arousal, flow, and sexual satisfaction. Conversely, because OSP represents a weak integration of sexuality in the broader self, this should orient the person only toward immediate satisfaction of the sex drive. OSP should therefore be associated with high arousal states and some flow, but also with negative emotions. In addition, the restrained set of mental representations activated under OSP and lack of inhibitory processes triggered should create persistent intrusive thoughts about sexuality at irrelevant moments. Such should not be the case for HSP.

Method

Participants and procedures. Participants were 639 undergraduate and graduate students (442 females, 197 males). Their

mean age was 24.91 years ($SD = 5.46$). They were invited to participate in an online study on the topic of sexuality in exchange for being entered into a drawing for one of three prizes of \$125.

Measures.

Sexual Passion Scale. The Passion Scale (Marsh et al., 2013; Vallerand, 2010; Vallerand et al., 2003) assesses the type of passion that characterizes people's engagement in a specific passionate activity. The Passion Scale is highly flexible, as the word "activity" in the various items can be replaced by basically any specific activity (see Marsh et al., 2013). In addition, shorter versions of the scale, such as a six-item version of the scale (three items for each subscale), have been used with much success (see Lafrenière, Vallerand, Donahue, & Lavigne, 2009; Vallerand et al., 2007). In the present research, we used a short six-item scale, and the word "activity" was replaced with the word "sex." The three items measuring HSP were "Sex is in harmony with the other things that are part of me," "Sex is well integrated in my life," and "Sex is in harmony with the other activities in my life." The three items measuring OSP were "I have almost an obsessive feeling for sex," "Sex is the only thing that really turns me on," and "I have the impression that sex controls me." The items of this scale and those of all other scales presented below (except when mentioned otherwise) were responded to on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Alphas in this study were .82 and .83 for HSP and OSP, respectively.

Passion criteria. In the literature on passionate activities, three criteria have been identified to determine whether a person is passionate for a given activity (Marsh et al., 2013; Vallerand et al., 2003). We adapted these criteria to assess participants' level of sexual passion, that is, how much they like or love the activity ("I love sex"), value it ("Sex is important for me"), and invest time and energy in it ("I spend a significant amount of time engaging in various sexual activities"). Alpha for these items was .82. As such, the passion criteria assess the intensity of the sexual passion and the passion scale assesses the extent to which this sexual passion is harmonious or obsessive.

Emotions. Participants were asked to rate to what extent they usually experience each of 13 positive and negative emotions while they engage in sex-related activities (e.g., solitary masturbation, sexual intercourse). Items for positive emotions were *enthusiastic, happy, joyful, amused, and in a good mood* ($\alpha = .90$). Items for the subscale of negative emotions were *angry, guilty, anxious, shy, and disgusted* ($\alpha = .72$). Three items measuring high positive arousal states inspired by the Affective Sexual Arousal scale (Mosher, Barton-Henry, & Green, 1988), and adapted to tap into positive high level of arousal when engaging in sex-related activities, were used: *highly excited, on a high, and I trip hard* ($\alpha = .86$).

Flow. Seven items from the Flow State Scale (Jackson & Eklund, 2002; Jackson & Marsh, 1996) were used in this study to assess participants' flow experience when engaging in sex-related activities (e.g., "I have total concentration"). These flow items were chosen because they could apply to sexual activities without being modified. Cronbach's Alpha in this study was .80.

Sexual satisfaction. One item used in past research (Beaulieu-Pelletier, Philippe, Lecours, & Couture, 2011) was used to assess participants' current sexual satisfaction ("To what extent are you currently sexually satisfied in your life?"). This item was re-

sponded to on a 5-point Likert scale (1 = *not satisfied at all*, 5 = *totally satisfied*).

Intrusive sexual thoughts. Three items devised for the purpose of the present study measured the extent to which participants had intrusive thoughts related to sexuality (e.g., "I think about sex at times when I should not"). Alpha was .68.²

Results and Discussion

Structural validity of the Sexual Passion Scale. A CFA was conducted using Mplus 7 to examine the factorial structure of the scale. The model was composed of two latent variables (HSP and OSP), each composed of three observed variables (i.e., items). Fit indices for this model were adequate, Satorra-Bentler $\chi^2(8) = 24.52$, $p < .01$; comparative fit index (CFI) = .99, root mean square error of approximation (RMSEA) = .057 90% CI [.032, .083], standardized root mean square residual (SRMR) = .034. Factor loadings ranged from .71 to .90. An alternative one-factor model was also tested, but was revealed to be clearly inadequate, Satorra-Bentler $\chi^2(9) = 730.59$, $p < .000$, CFI = .48, RMSEA = .35, SRMR = .22. Invariance of the scale was tested as a function of relational status and gender. Results showed full configural and metric invariance as a function of relational status—the full fixed model was not significantly different than the loadings-free model, $\Delta\chi^2(6) = 9.75$, *ns*. As for gender, configural invariance was found, but not full metric invariance (i.e., factor loadings not invariant)—the loadings-free model, $\chi^2(16) = 35.09$, being significantly different than the full-fixed model, $\chi^2(22) = 79.67$, with a significant chi-square difference of $\Delta\chi^2(6) = 44.58$, $p < .01$. Further examination of the items revealed that two items differed as a function of gender: Items 2 and 3 of the OSP subscale. The variances of these items were higher for males than for females. However, given that their standard errors were also larger for males, their standardized loadings were almost equivalent (Item 2 = .78 vs. .89, Item 3 = .83 vs. .84, for females and males, respectively), and both remained high and significant. The other items were invariant when compared with a model with partial metric invariance ($H_{\lambda, OSP2-OSP3}$), $\Delta\chi^2(4) = 4.68$, *ns*.

Table 1 shows the means, standard deviations, and zero-order correlations among each type of passion and the measured outcomes. Separate factorial ANOVAs with Gender and Relational Status as factors, and each type of passion as the dependent variable, were conducted to examine whether passion would differ as a function of these factors. Results revealed that males ($M = 3.02$, $SD = 1.39$) reported a higher level of OSP than females ($M = 1.99$, $SD = 1.03$), $F(1, 635) = 82.36$, $p < .001$, $d = .88$. There was no gender difference on HSP. Passion also differed as a function of relational status. Participants in a relationship reported a higher level of HSP ($M = 5.44$, $SD = 1.26$) than singles ($M = 4.98$, $SD = 1.34$), $F(1, 635) = 17.46$, $p < .001$, $d = .37$. There was also a marginally significant difference between participants in relationships ($M = 2.19$, $SD = 1.22$) and singles ($M = 2.56$, $SD = 1.28$) on OSP, $F(1, 635) = 3.84$, $p = .051$. There were no significant Gender \times Relational Status interactions.

Subjective consequences of each type of sexual passion. Correlational results unveiled that the two types of sexual passion were uncorrelated with each other ($p = .16$). In addition, both types of passion were positively and strongly correlated with the passion criteria, suggesting that each type of sexual passion is

Table 1
Means, Standard Deviations, and Zero-Order Correlations
Between Sexual Passion and Passion Criteria, Emotions, Flow,
Sexual Satisfaction, and Intrusive Sexual Thoughts: Study 1

Variables	M	SD	Sexual passion	
			HSP	OSP
Harmonious passion (HSP)	5.30	1.30	—	—
Obsessive passion (OSP)	2.31	1.25	-.06 (-.36**)	—
Passion criteria	4.96	1.13	.53**	.41**
Positive emotions	5.64	.99	.50** (.36**)	.02 (-.26**)
High arousal states	4.90	1.30	.36** (.35**)	.30** (.26**)
Negative emotions	1.83	.66	-.36** (-.33**)	.16** (.26**)
Flow	4.50	1.09	.34** (.22**)	.12** (-.03)
Sexual satisfaction	3.56	1.10	.42** (.38**)	-.07** (-.19**)
Intrusive sexual thoughts	2.31	1.21	-.11** (-.32**)	.57** (.49**)

Note. $n = 639$. All measures were assessed with a Likert scale from 1 to 7, except sexual satisfaction, which ranged from 1 to 5. Partial correlations, controlling for passion criteria, are shown in parentheses. Dash = association between these variables was not measured.

** $p < .01$.

orthogonal to the other, with both corresponding to what characterizes a passion. Each type of passion also led to distinct subjective consequences. In line with research on passionate activities, HSP was positively associated with positive emotions, high arousal states, flow, and sexual satisfaction, and negatively associated with negative emotions and intrusive sexual thoughts. Conversely, OSP was positively associated with high arousal states and weakly with flow, but not with positive emotions and sexual satisfaction, but positively associated with negative emotions and intrusive thoughts. Table 1 also shows the partial correlations among HSP and OSP and these subjective outcomes, controlling for the passion criteria. Almost all correlations were unaltered by controlling for passion criteria, therefore suggesting that the specific type of sexual passion that people hold has important consequences for the way sexuality is experienced, beyond the strength of one's passion.

Moderators. Using multiple regression analyses, we examined whether the relationships between sexual passion and the outcomes would be moderated by gender or by relational status (single or in relationship). There were only two findings moderated by gender. The relationships between OSP and intrusive sexual thoughts and high arousal states were slightly more positive for females ($\beta = .58$, $p < .001$, and $\beta = .37$, $p < .001$, respectively) than for males ($\beta = .39$ and $\beta = .16$, $ps < .01$). One finding was moderated by relational status. OSP was slightly more associated with high arousal states for participants in relationships ($\beta = .34$, $p < .001$) than those who were single ($\beta = .19$, $p < .01$). In all cases, however, the relationship between OSP and these outcomes remained significant. Taken together, the present findings provide support for a dualistic perspective of sexual passion from an intrapersonal perspective, in that sexual passion (and the type of passion) matters for individuals that are single or in a relationship.

² Attachment was also measured in this study, but even after controlling for its effect, results remained significant. It is therefore not presented in the Results section because of space constraints.

Study 2: Discriminant and Predictive Validity

The findings of Study 1 revealed that the two types of passion predicted different types of intrapersonal outcomes. The purpose of Study 2 was to investigate the discriminant and predictive validity of the two types of sexual passion on relational consequences compared with related existing constructs in the literature. Three of these constructs have been selected because they are closely related to each type of passion investigated in the present article: (a) *sociosexuality*, which is defined as an individual difference in the willingness to engage in casual sex or in sex without love (Simpson & Gangestad, 1991); (b) a measure of *relational passion* tapping into the classical interpersonal definition of sexual passion examined in the introduction of this article, which reflects passionate love and/or physical attraction to a partner (Hatfield & Sprecher, 1986); and (c) *trait self-control*, which typically facilitates the inhibition of inappropriate sexual thoughts and helps resisting sexual temptation (e.g., Gailliot & Baumeister, 2007).

In OSP, sexuality is experienced as imposing on the person. Therefore, OSP is posited to lead to less control over one's sexual passion than HSP. However, these aspects of control should only apply to the sphere of sexuality and should not reflect general abilities of self-control, as assessed by a measure of trait self-control. Therefore, we did not make a specific hypothesis for how each type of sexual passion would relate to self-control. However, we hypothesized that both types of passion would be positively correlated, but no more than moderately, with relational passion (attraction toward one's partner) and to sociosexuality. Note that sociosexuality does not measure a preference for sex without love over sex in committed relationships, but only openness to it. Therefore, both types of sexual passion were expected to be related to sociosexuality.

The predictive validity of the two types of sexual passion was tested with respect to four relational outcomes: (a) relationship quality, (b) attentiveness to alternatives, (c) conflicting sexuality, and (d) aggression in response to a relational threat. We examined these associations while controlling for the three related constructs presented above (sociosexuality, relational passion, and self-control). Given the greater integration of sexuality that takes place with HSP, notably within the relational sphere, we expected HSP, but not OSP, to be positively associated with relationship quality. However, the poorer integration reflected in OSP should create more conflict between sex and other life spheres, and a greater difficulty to control one's attention to alternative partners when engaged in a relationship. Finally, based on past research showing that obsessive passion leads to more aggression than HSP during activity engagement (Philippe et al., 2009), particularly under self-threat conditions (Donahue et al., 2009), we expected OSP to be associated with violent/aggressive actions when facing relationship threats, such as situations triggering jealousy, but not HSP.

Method

Participants and procedures. Participants were 165 undergraduate and graduate students (134 females, 31 males), of which 106 were currently in a romantic relationship. Mean age was 24.53 years ($SD = 5.60$ years). Singles did not complete the scales of relational passion, attentiveness to alternatives, perceived relationship quality, and reactions to relational threats.

Measures. The Sexual Passion Scale was used again in this study. Alphas were .91 and .69 for HSP and OSP, respectively.

Control variables.

Self-control. The Brief Self-Control Scale (Tangney, Baumeister, & Boone, 2004) was used to assess self-control. This scale is composed of 13 items responded to on a 7-point Likert scale format (1 = *do not agree at all*, 7 = *very strongly agree*). This Likert scale format was used for all other measures described below. Alpha was .75 in this study.

Sociosexuality. The revised sociosexual orientation inventory (Penke & Asendorpf, 2008) was used to assess sociosexuality. This nine-item scale measures willingness to engage in casual or uncommitted sexual relationships. Alpha was .81.

Relational Passion Scale. Yela (2006) developed an Erotic Passion Scale based on several other passion scales—Sternberg's Passion Scale (Sternberg, 1986), the Physiological Arousal Scale (Critelli, Myers, & Loos, 1986), di Fraia's Passion Scale (di Fraia, 1991), and the Passionate Love Scale (Hatfield & Sprecher, 1986)—retaining the items pertaining to physical factors and arousal. Through factor analyses, he selected the five items with the maximum saturation, minimum saturation on other factors, and maximum correlation with their factor. Sample items include "I find myself very sexually aroused when I kiss my partner" and "I feel my body responds when my partner touches me." In the present study, we labeled this scale Relational Passion to clearly distinguish it from the Sexual Passion Scale. Alpha was .90.

Relational outcomes.

Perceived relationship quality. Relationship quality was assessed with the seven-item Perceived Relationship Quality Components Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000a). This measure assesses six components of romantic relationships (satisfaction, commitment, intimacy, trust, passion, and love), each with one item. In addition, a Romance subscale was also measured with one more item, in line with Fletcher, Simpson, and Thomas's (2000b) further expansion of the PRQC. Alpha was .82.

Attentiveness to alternatives. Attention to alternative partners was assessed with the Attentiveness to Alternatives Index (Miller, 1997). This scale, composed of six items, assesses the extent to which participants are alert to other potential partners. Sample items include "I am distracted by other people that I find attractive" or "I rarely notice other good-looking or attractive people" (reverse-scored). Alpha was .71.

Sex conflict. A short three-item scale adapted from Vallerand et al. (2003, Study 1) was devised for the purpose of the present study to assess participants' conflict between sex and other aspects of their life (e.g., "My sexuality conflicts with other aspects of my life"). Alpha was .53.

Reactions to relational threats. We presented the participants with a scenario drawn from Dijkstra and Buunk (1998) in which their current partner is flirting with a member of the opposite sex:

You are at a party with your girlfriend [boyfriend] and you are talking with some of your friends. You notice your girlfriend [boyfriend] across the room talking to a man [woman] you do not know. You can see from his [her] face that he [she] is very interested in your girlfriend [boyfriend]. He [She] is listening closely to what she [he] is saying and you notice that he [she] casually touches her [his] hand. You notice that he [she] is flirting with her [him]. After a minute, your girlfriend [boyfriend] also begins to act flirtatiously. You can tell from the way she [he] is

looking at him [her] that she [he] likes him [her] a great deal. They seem completely absorbed in each other.

Participants were instructed to imagine experiencing this situation with their current partner and to imagine their reactions with respect to their partner and to the other person in the scenario and how they (participants) would feel. They were then presented with 13 attitudes and behaviors, of which five included physical and verbal violence actions (e.g., "I would yell at my partner," "I would hit the person flirting with my partner"; $\alpha = .92$). Other filler items measured partner distrust (e.g., "I would question the trustworthiness of my partner") and communicative actions (e.g., "I would discuss this situation with my partner afterward").

Results and Discussion

Regression analyses were used to examine the relationships between each type of passion with the control variables, while controlling for age, gender, and time in relationship (only participants in couple), and the other control variables when applicable. We also examined whether there were interactions with gender or relational status. Results are shown in Table 2. As can be seen, both HSP and OSP were positively and independently associated with sociosexuality and relational passion, but unrelated to self-control. In other words, each of the two types of sexual passion contributed independently of each other to predict sociosexuality and relational passion.

HSP and OSP related in similar ways to the control variables, but differently to the relational outcomes (see Table 2), even after controlling for self-control, sociosexuality, and relational passion. HSP was positively associated with relationship quality, but not OSP. OSP was positively associated with attentiveness to romantic alternatives and sex conflict, but not HSP. Finally, as hypothesized, OSP, but not HSP, was positively related to verbal and physical violence as an endorsed response to the scenario of jealousy.³

Overall, the present results suggest that sexual passion is a distinct construct from those of sociosexuality, relational passion, and self-control, with important predictive validity as pertains to romantic relational outcomes. In addition, both OSP and HSP lead to different predictions with respect to these relational outcomes, as hypothesized, with HSP leading to more adaptive outcomes than OSP.

Study 3: Sexual Passion and the Survival of Romantic Relationships

The objective of Study 3 was to examine a central relational consequence of sexual passion on the most important romantic relationship outcome: the sustainability of relationships over time. We asked people engaged in a serious relationship at the time of the study to complete measures of sexual passion, and more than 1 year later, we examined whether the same participants were still with the same partner or not. We also investigated four other potential predictor variables that might share variance with sexual passion, and which have been evidenced to impact couple sustainability: relationship quality (Le, Dove, Agnew, Korn, & Mutso, 2010), attachment (Feeney & Noller, 1992), psychological distress (Whisman, Tolejko, & Chatav, 2007), and romantic passion. The latter has often been confounded with sexual passion. However, romantic passion reflects passion toward a romantic partner and has been found to predict relationship sustainability (Carbonneau & Vallerand, 2013; Ratelle, Carbonneau, Vallerand, & Mageau, 2013).

Because OSP is characterized by a weak integration of sexual representations with other self-aspects, OSP should be conducive to poor relational consequences over time, and eventually lead to the dissolution of the relationship. Conversely, because HSP is characterized by a greater integration of sexual representations, notably with relational representations, this type of sexual passion is more likely to lead to adaptive and constructive relational outcomes over time, which should prevent breakup and help sustain the relationship over time. Therefore, we predicted that OSP would increase the likelihood of union dissolution over time, whereas HSP would not. We also hypothesized that this result should hold after controlling for the other control explanatory variables and relationship quality measured at Time 1.

Method

Participants and procedures. A total of 192 undergraduate and graduate students (81% females, mean age = 24.40 years, $SD = 4.74$) engaged in a serious romantic relationship (at least three months old) at the beginning of the study were invited using their institutional e-mail to complete an online questionnaire regarding their couple relationship. At Time 1, they completed scales of attachment, psychological distress, relationship quality, as well as romantic and sexual passion scales. At Time 2, 1.5 years later, they were asked whether they were still with the same partner or whether they had broken up. If a breakup had occurred, they were asked to indicate the day and month when it took place.

Measures.

Sexual Passion Scale. The same Passion Scale used in Studies 1 and 2 was used again in this study. Alphas were .84 and .78 for HSP and OSP, respectively.

Relationship quality. The PRQC used in Study 2 was used again in this study. Cronbach's Alpha coefficient was .87 in this study.

Attachment. The ECR-S (Wei, Russell, Mallinckrodt, & Vogel, 2007) is a short, 12-item version of the Experiences in Close Relationships scale (ECR; Brennan, Clark, & Shaver, 1998) used to measure the two adult romantic attachment dimensions, each with six items. Evidence of validity and reliability highly similar to the original full scale has been reported for this short scale (Wei et al., 2007). Alphas were .70 and .72 for the Avoidance and Anxiety subscales, respectively.

Psychological distress. The short, 10-item scale of the Symptom Checklist (Derogatis, 1975; Rosen et al., 2000) was used to assess psychological distress. This scale assesses various psychological symptoms, such as depression, anxiety, interpersonal sensitivity, and somatization, and correlates highly ($r_s > .50$) with various other symptoms scales (e.g., Rosen et al., 2000). Partici-

³ HSP and OSP were not associated with the items measuring distrust and communicative actions. Overall, There were some significant HSP \times Gender and OSP \times Gender interactions. Simple effects revealed that HSP was positively associated with self-control in men ($t = 3.29, p < .01$), but not in women ($t < 1.00, ns$). Conversely, OSP was negatively associated with self-control for females ($t = -2.32, p < .05$), but was unrelated for males ($t = 1.22, ns$). Results also revealed that OSP was more strongly associated with sociosexuality in males ($t = 3.70, p < .01$) than in females ($t = 2.29, p < .05$), although the relationship was significant for both sexes. There were no other significant moderations, including interactions with relational status.

Table 2
Associations Between Sexual Passion and Control Variables and Relational Outcomes: Study 2

Variables	Control variables			Relational outcomes			
	Self-control	Sociosexuality	Relational passion	Relationship quality	Attentiveness to alternatives	Sex conflict	Violent actions under threat
Step 1							
Age	.04	.07	-.11	-.21*	.01	-.03	-.23*
Gender	-.03	.08	.14	-.04	.00	.07	-.05
Relational status	-.01	-.16*	—	—	—	.02	—
Time in relation	—	—	-.09	.16	-.02	—	.17
Self-control	—	-.17*	.20*	-.01	-.02	-.20**	.02
Sociosexuality	-.21*	—	-.14	-.05	.51**	.07	-.06
Relational passion	—	—	—	.54**	-.16	—	-.19
HSP	.14	.29**	.46**	.26**	.13	.04	.05
OSP	-.16	.27**	.31**	-.07	.19*	.39**	.41**
<i>n</i>	165	165	106	106	106	165	106

Note. $n = 165$ ($n = 106$ in couple, 49 singles). Relational status: 0 = single, 1 = in couple. Gender: 0 = females, 1 = males. HSP = harmonious sexual passion; OSP = Obsessive sexual passion; Dash = association between these variables was not measured.

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

pants were asked to rate the extent to which they had been bothered by each symptom during the last 2 months on a 5-point Likert scale (1 = *not at all*, 5 = *extremely*). Alpha was .82 in this study.

Romantic Passion Scale. The Romantic Passion Scale (Carbonneau & Vallerand, 2013; Ratelle et al., 2013) has been developed in light of the literature on passionate activities and assesses both harmonious and obsessive romantic passion toward one's romantic partner. The use of this scale thus consisted of a very stringent test of the distinction between sexual and romantic passion, as the only difference between the two scales was that the items pertain to one's partner in the Romantic Passion Scale (e.g., "My relationship with my partner is in harmony with the other activities in my life") and to sex in general in the Sexual Passion Scale (e.g., "Sex is in harmony with the other activities in my life"). Only the three items of each type of romantic passion corresponding to the items of the sexual passion subscales were used. Alphas were .91 and .57 for HSP and OSP, respectively.

Results and Discussion

Table 3 reports the means, standard deviations, and correlations of all study variables. As in Study 2, HSP, but not OSP, was

positively associated with relationship quality. Romantic passion paralleled this finding, as only harmonious, but not obsessive, romantic passion was positively associated with relationship quality. As expected, both attachment anxiety and avoidance and psychological distress were negatively associated with relationship quality. Finally, both HSP and OSP were unrelated to psychological distress, underscoring that no type of sexual passion appears to be a response to—or a determinant of—psychological distress.

One-and-a-half years later, the same participants were contacted again and asked if they were still with the same partner or not. If not, they were asked to provide the month and day of their breakup. For participants who reported the dissolution of their Time 1 relationship, we computed their survival time by subtracting the date of their breakup from the date they had initially completed the Time 1 questionnaire. For participants who were still with the same partner, we calculated the time variable by subtracting the date they completed the questionnaire at Time 2 by the date they completed the Time 1 questionnaire. A survival analysis was conducted with union dissolution (0 = same partner, 1 = dissolution) as the dependent variable and the time since it occurred. Independent variables were age, gender, duration of the relationship at Time 1, relationship quality, attachment, romantic

Table 3
Means, Standard Deviations, and Zero-Order Correlations Between Sexual and Romantic Passion, Attachment, Psychological Distress, and Relationship Quality: Study 3

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
(1) Harmonious sexual passion	5.39	1.42	—						
(2) Obsessive sexual passion	1.99	1.12	.18*	—					
(3) Anxious attachment	3.03	1.02	-.17*	.02	—				
(4) Avoidant attachment	2.13	.80	-.29**	.20**	.22**	—			
(5) Psychological distress	1.97	.59	-.13	.08	.42**	.36**	—		
(6) Harmonious romantic passion	5.78	1.15	.30**	-.18**	-.25**	-.51**	-.33**	—	
(7) Obsessive romantic passion	2.09	1.03	.09	.31**	.44**	-.02	.37**	-.05	—
(8) Relationship quality	5.68	.94	.49**	-.01	-.35**	-.52**	-.28**	.58**	.06

Note. $n = 192$. Dash = association between these variables was not measured.

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

passion, psychological distress, and sexual passion—all measured at Time 1. Results revealed that OSP was positively associated with a greater likelihood of breaking up over time, over and above all other covariates ($b = 1.08$, standard error [SE] = .55, Wald = 3.89, $p < .05$). Duration of the relationship at Time 1 was negatively associated with the likelihood of union dissolution over time ($b = -.016$, $SE = .008$, Wald = 4.16, $p < .05$). Harmonious romantic passion was also negatively associated with union dissolution ($b = -.34$, $SE = .15$, Wald = 4.99, $p < .05$), thus replicating the results of Ratelle and colleagues (2013). No other variables, including HSP, were significant.

As expected, OSP was shown to lead to less constructive relational outcomes, as it predicted union dissolution, even after controlling for relationship quality, attachment, and psychological distress—all variables that have been shown to influence relationship dissolution. HSP, however, did not predict a greater likelihood of remaining with the same partner, but was not associated with union dissolution either. Finally, the fact that both harmonious romantic passion and OSP independently predicted union dissolution speaks to the conceptual distinction between romantic and sexual passion.

Study 4: Delving into the Cognitive Representations of Sexual Passion

Study 1 provided evidence for intrapersonal subjective consequences of sexual passion, and Studies 2 and 3 for relational consequences of sexual passion. Studies 4 and 5 will show the cognitive consequences of sexual passion that can be expected according to the dualistic model of passion. Notably, this model states that HSP and OSP should reflect different levels of integration of sexual representations. Attachment theories (Birbaum, 2007; Hazan & Shaver, 1987; Mikulincer & Shaver, 2007) specify that the sexual system tends to merge increasingly with the relational/attachment system once in adulthood, and that a coherent and harmonious mental organization occurs when both systems are allowed to freely intertwine. Therefore, with HSP, sexual representations should be particularly well integrated with relational representations, which should not be the case for OSP. A first objective of Study 4 was therefore to examine the proportion of sexual versus relational semantic representations characterizing each type of sexual passion. Given the posited greater integration of relational and sexual representations in HSP, it was hypothesized that with a high level of HSP, people should report an equal level of semantic sexual and relational representations. Conversely, in OSP, there should be a preponderance of sexual representations over relational ones. Because these relationships are not necessarily linear, as they are expected to occur only at a certain level of sexual versus relational representations, we also tested quadratic relationships.

A second objective of Study 4 was to examine the cognitive consequences of each type of sexual passion by investigating how sexual information is processed under each type of passion. When a sexual stimulus is encountered under OSP, this activates the sexual system of representations. Because these representations share little integration with other types of representations (notably relational), the activation should remain strong and heavily taint the person's judgment, such that situations should be perceived as inexorably sexual when, objectively, they very well could not be.

Under HSP, sexual representations are well integrated with other types of representations. Consequently, activation freely flows through complex networks of representations and the person's judgment is nuanced and encompasses competing interpretations, including nonsexual ones. We tested these hypotheses in two ways. First, we showed participants an ambiguous scenario between two students interacting and asked whether the intentions of the target person in the scenario were sexual or not. Second, we presented participants with either sex words or neutral words within a lexical-decision task and asked them to classify them as quickly as they could. Embedded in those words were words that could take a sexual connotation, but not necessarily (e.g., nurse, heels, uniform). We expected that OSP would be associated with more of these ambiguous words classified as sexual than as neutral, and with greater perceptions of sexual intentions in the ambiguous scenario. HSP should not show any bias in the processing of sexual information.

Method

Participants. A total of 162 undergraduate and graduate students took part in this study (116 females, 46 males; 34% singles). Their mean age was 26.90 years ($SD = 6.77$). They were invited using their institutional e-mail to participate in an online study on sexual attitudes and behaviors in exchange for being entered into a draw for one of three prizes of \$125. They completed the Sexual Passion Scale and then read the ambiguous scenario. Next, they completed the semantic representations task and the lexical classification task.

Measures.

Sexual passion. Alphas for the Harmonious and Obsessive subscales were .86 and .73.

Sexual/relational semantic representations. Participants were asked to list as many words as they could in 1 minute that are related to the word "sex." Two judges, blind to the participants' other data, coded these words for whether they corresponded to purely sexual words (e.g., "penis," "breasts," "vibrator"), sexual-relational words ("intimate," "caress," "intercourse"), or other (e.g., "energy"). Interjudge reliability was adequate, with intraclass $r_s > .90$. A ratio of sexual versus relational words was calculated by dividing the number of sexual words (incremented by 1) by the number of relational words (incremented by 1). As such, a high score on this index represents a greater number of sexual versus relational semantic representations.

Biased processing: Perceptions of sexual intentions. We presented students with an ambiguous scenario that could suggest that the other person has a sexual interest in the participant, while many other explanations would remain plausible (e.g., friendliness):

You are attending a class at school and you are sitting next to a (male/female) student you find attractive. There is an in-class team assignment and this student suggests that you do it together. The assignment goes well and during the break, you go together to the student coffee shop to buy a coffee and continue your discussion. Once the class is over, he or she mentions that he or she liked to work with you and congratulates you for the oral presentation you made in the previous class. He or she then proposes to wait for you so that you can walk together to the subway. Before leaving you, he or she smiles, wishes you a good evening, and adds "see you in class next week!"

Participants were then presented with a number of items expressing the intents of the other person. A first set of six items assessed nonsexual friendliness (e.g., “Does this person want to be friend with you?”; “Does this person find you intelligent?”), and a second set of nine items assessed sexual intents (e.g., “Does this person find you sexually attractive?”; “Is this person sexually interested by you?”). Participants rated each item with a slider ranging from 0 (*not at all*) to 100 (*extremely*). Alphas were .62 for friendly and .93 for sexual intents.

Biased processing: Responses to ambiguous sexual words. A lexical classification task was used to assess biases in the processing of sexual versus neutral (other) words and of ambiguously sexual words. Participants were shown, one by one on a computer screen, sex-related words (e.g., “penis,” “intercourse,” “ass”) or neutral nonsexual words (e.g., “pizza,” “bird,” “calculator”), and were asked to press, as quickly as possible, the “s” key on their keyboard to classify a trial word as sexual or the “k” key to classify the trial word as a nonsexual neutral word. In addition to those words, there was a set of ambiguous words that could take a sexual connotation, but that are typically not understood as sexual (e.g., “nurse,” “heels,” “uniform”).

Participants first completed a set of 16 trials and then continued with the real task for 92 trials. We examined whether ambiguous words would be categorized as sexual or not by computing an index summing how many of these words had been classified as sexual. Alpha for this index was .65. We also calculated indexes for the number of sexual ($\alpha = .76$) and neutral words ($\alpha = .85$) correctly classified. In addition to these indexes, reactions times (RTs) were calculated for each trial, thus assessing processing speed of sexual versus nonsexual (neutral and nonambiguous) stimuli. We based our calculation of RTs on the improved algorithm of the Implicit Association Task (Greenwald, Nosek, & Banaji, 2003), with the exception that we did not enforce an error penalty. Trial blocks were discarded. This algorithm yields a *d* measure (called *d-sex* in the present study) that is the difference between the means of the RTs for the sexual and neutral trials divided by its associated pooled-trial standard deviation. We multiplied the result by -1 , such that a higher score on this measure indicates faster RTs to sexual versus neutral words.

Results

Level of integration of sexual representations in HSP and OSP. Table 4 shows correlations among study variables as well

as their means and standard deviations. Regression analyses were used to examine the association between sexual passion and the ratio sexual/relational of semantic representations. Controlling for HSP, we examined whether there was a linear and a quadratic relationship between OSP and the ratio of semantic representations. OSP served as the dependent variable (because semantic representations are tested for their quadratic relationship with OSP, their terms must be entered as independent variables). At Step 1, HSP and the ratio of semantic representations were entered. At Step 2, the squared term of semantic representations was entered. Results revealed a main linear effect of semantic ratio on OSP ($\beta = .30, p < .01, R^2 = .088$), with Step 1 explaining 9% of the variance, $F(2, 159) = 7.68, p < .01$. At Step 2, results showed a significant quadratic function of the semantic ratio ($B = .058, SE = .029, = .49, t = 2.00, p < .05, \Delta R^2 = .023$). Plotting of this quadratic function (see Figure 1a) showed a U shape, representing a null relationship between OSP and the ratio of semantic representations when the ratio was below 1.00 (sexual vs. relational representations) and OSP was below 2.13 (vertex point). However, once the number of sexual representations increased above the number of relational representations (a ratio above 1.00), OSP started to show a steep increase. Controlling for the total number of semantic words provided did not affect the results, thus underscoring that it is the ratio of sexual over relational representations that is associated with OSP.

The same regression was conducted, this time with HSP as the dependent variable and controlling for OSP. At Step 1, results showed that the ratio of semantic representations was negatively and linearly associated with HSP ($\beta = -.18, p < .05, R^2 = .03$), thus suggesting that too many sexual over relational representations decreases HSP. At Step 2, results also revealed a significant quadratic function of semantic representations ($B = -.072, SE = .036, = -.51, t = -2.01, p < .05, \Delta R^2 = .024$). Controlling for the total number of semantic words did not alter the results. Plotting of this quadratic function (see Figure 1b) revealed an inverse U shape, showing an increasing positive relationship between the ratio of semantic representations and HSP until the ratio reached 1.95 and HSP 5.19 (vertex). Past this point, the relationship between the semantic ratio and HSP turned negative. This result implies that an adequate balance between sexual and relational representations is associated with HSP, not simply relational representations. However, once sexual representations are over-represented by approximately twice the number of relational rep-

Table 4
Means, Standard Deviations, and Correlations: Study 4

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
(1) Harmonious sexual passion	5.00	1.40	—							
(2) Obsessive sexual passion	2.25	1.12	.02	—						
(3) Ratio of semantic representations	1.50	1.51	-.16*	.29**	—					
(4) Sexual categorization of ambiguous words	.24	.21	-.08	.36**	.22**	—				
(5) Sexual categorization of sex-related words	.92	.11	.05	.03	.08	.26**	—			
(6) Errors classifying neutral words	.04	.08	.03	.20*	.11	.52**	.05	—		
(7) Scenario – perceived sexual intentions	46.42	17.91	.05	.31**	.10	.34**	.32**	.13	—	
(8) Scenario – perceived friendly intentions	66.72	10.70	.03	.08	.16*	.04	.16*	.01	.26**	—
(9) <i>d-sex</i>	.06	.17	-.04	.19*	.25**	.65**	.39**	.53**	.33**	.03

Note. $n = 162$. Dash = association between these variables was not measured.
* $p < .05$. ** $p < .01$.

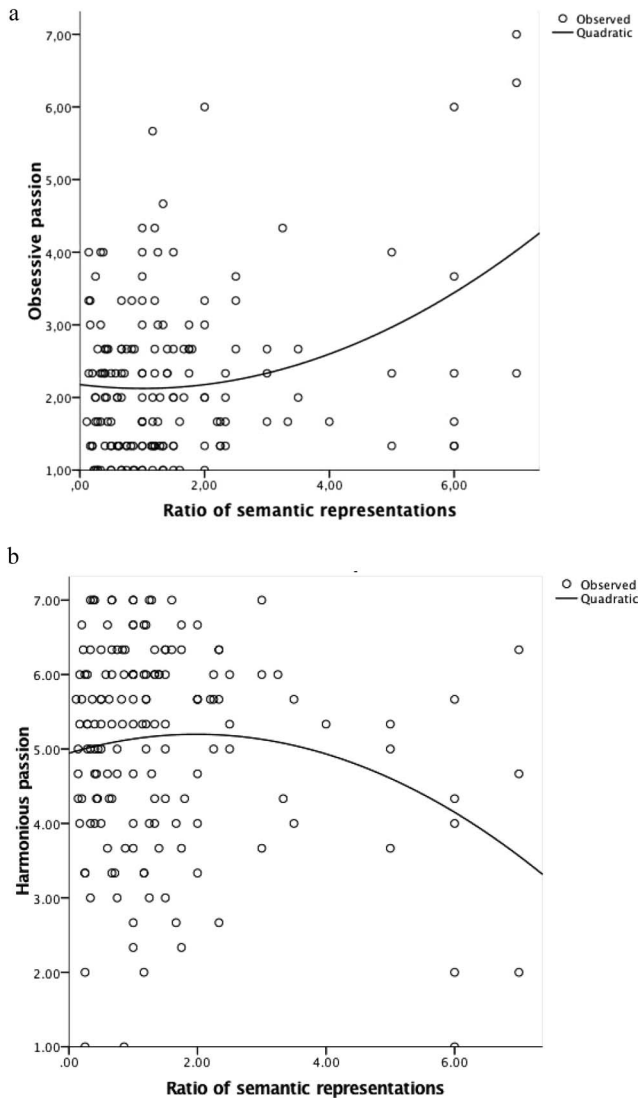


Figure 1. Study 4: Curvilinear relationships between ratio of semantic representations (sexual/relational) and obsessive and harmonious sexual passion.

representations, HSP starts to decrease and, as shown above, OSP begins to increase.⁴

Biased processing of sexual information. Next, we conducted two separate linear regression analyses to examine how HSP and OSP entered as independent variables would be associated with the number of ambiguous words classified as sexual and with perceived sexual intentions in the scenario (processing bias variables). Results showed that only OSP was positively associated with ambiguous words classified as sexual ($\beta = .36, p < .01$), whereas HSP was unrelated to them ($\beta = -.09, ns$). Controlling for the number of sexual words correctly classified did not alter these results and both OSP and HSP were unrelated to this variable ($\beta < .05, ns$). Results also showed that, while controlling for friendly intentions, OSP was positively associated with perceived sexual intentions in the scenario ($\beta = .29, p < .01$), whereas HSP was unrelated to them ($\beta = .05, ns$).

Overall, the present findings support the contention that sexual semantic representations are more integrated with relational semantic representations in HSP, whereas sexual representations appear to be overwhelmingly preponderant in OSP relative to relational representations. Such a mental organization has important consequences for the processing of external stimuli, as sex-related information is more quickly processed and ambiguous stimuli are more likely to be interpreted as sexual in OSP, but not in HSP.

Study 5a: When Attractive Targets Disrupt Attention and Goals

Study 4 showed that HSP and OSP differ in the organization of their cognitive representations and in the way ambiguous stimuli are processed. Study 5 examined whether this biased attention placed on sexual stimuli found in OSP could lead to cognitive consequences beyond the processing of sexual information. More specifically, Study 5 investigated whether processing sexual stimuli could conflict with ongoing sex-unrelated goals. With OSP, representations about sexuality show little integration with other types of mental representations. When these representations are activated by sexual stimuli, the activation remains circumscribed to a restrained area and high, as it does not spread into more elaborated networks of goals and actions. This high activation is more difficult to inhibit and the person's attention is thus more likely to shift onto the external stimuli, even when these stimuli are task-irrelevant, which may bring about intrusive thoughts and/or conflict with the task at hand. In the case of HSP, representations about sexuality are complexly intertwined with relational aspects and other representations. When external sexual stimuli trigger these representations, activation spreads into a complex system of goals and actions, which are likely to dilute the activation if judged irrelevant to the immediate task at hand.

To examine this issue, we used subliminal sexual stimuli by unconsciously priming people with (a) photos of attractive opposite-sex targets, (b) photos of low-average opposite-sex targets, or (c) a black-and-white-mask background, within a task totally unrelated to sex. The task consisted of responding, as fast as possible, to whether photos presented on a screen were natural (e.g., strawberry) or artificial (e.g., airplane) objects. We expected that the unconscious presentation of sexual stimuli would be processed differently as a function of the type of sexual passion people hold and would affect the speed at which the sex-unrelated task was completed.

We hypothesized that with OSP, people should not be able to control the activation of their primed sexual representations, which should conflict with their ongoing goals (completing the natural vs. artificial objects task). Consequently, OSP should be positively associated with RTs, as high OSP should show slower RTs than low OSP compared with the control groups. Conversely, because HSP is characterized by complex and integrated representational

⁴ The speed at which participants classified the sexual versus the neutral nonambiguous words (*d-sex*) was positively associated with the ratio of semantic representations, thus suggesting that overrepresentation of semantic sexual representations compared with relational ones is conducive to a faster processing of sexual stimuli versus nonsexual (neutral) stimuli. These results provide support for the validity of our ratio measure and are in line with a fan effect.

networks related to sexuality, this should facilitate the reduction of the mental activation triggered by the unconscious presentation of attractive partners and should therefore not disrupt attention on ongoing goals. Therefore, it was expected that HSP would be negatively associated with RTs, as high HSP should show faster RTs to respond than low HSP compared with the control group (primed with low average-looking targets or a black-and-white mask).

Method

Participants and procedures. Participants were 156 heterosexual people (98 females and 58 males) from the general population in the United States, Canada, Australia, and the United Kingdom, and recruited through the CrowdFlower interface. Mean age was 39.15 years ($SD = 12.58$). The vast majority (78%) was Caucasian, 12% were Asian, and the remainder were from other ethnic origins. A total of 42% were single, and the others were either dating, common-law partners, or married. To avoid participants' awareness of the purpose of the study, we framed it as a study on personality and information processing. Participants were first asked to complete a 44-item personality inventory. Embedded among those items were two harmonious and two OSP items. We only used two items per subscale to avoid the many repetitions of the term "sex" and therefore raising suspicion. Participants were randomly assigned to the experimental condition (primed with photos of attractive targets) or to one of two control groups (one primed with photos of low-average attractiveness targets and the other primed with a black-and-white mask).

Measures.

Sexual Passion Scale. Interitem correlations were .70 and .85 for HSP and OSP, respectively.

Pictures priming—The natural versus artificial objects task. A set of 60 photos of physically attractive and low-average looking males and females were selected from the public website www.hotornot.com. Low-average pictures were selected in order to avoid any potential overlap in attractiveness between attractive and average pictures. Pictures were initially selected based on the ratings of the website's users. Photos were set in black and white and the background was replaced by a randomized black-and-white texture. Additionally, a different sample of heterosexual undergraduate students ($n = 133$, 70% females) was asked to rate the 30 opposite-sex target photos for how physically attractive they were (1 = *not at all physically attractive*, 10 = *extremely physically attractive*). The five male and five female photos rated the highest were selected as attractive photos ($M = 7.00$, $SD = 1.49$), and the five male and five female photos with a low-average score ($M = 3.25$, $SD = 1.45$) served as unattractive (control) photos.

The task was programmed in Javascript, using the jQuery library, and was HTML5 compliant. It was modeled over the Bunnies & Lions Task, which has been recently developed to accommodate online semantic priming (Philippe & Bernard-Desrosiers, 2016; <http://www.elaborer.org/bunnies&lions.html>). Each trial of the task was constructed such that a plus (+) sign appeared in the center of the screen for 1,000 ms, followed by a 175-ms presentation of a natural or artificial object, followed by the presentation of a black-and-white photo of an attractive opposite sex person (control groups: low-average attractive person or black-and-white mask) for a duration of 20 ms. Immediately following this prime

appeared a textured mask photo for 200 ms, immediately followed by the presentation of a natural or artificial object for 300 ms. The sequence of images then stopped on another natural or artificial object until the participant made a response. Such a sequence of images makes it very hard for the participants to consciously focus on a particular one, except the last fixed one. For each object presented in the still image at the end of the sequence, participants were asked to press, as quickly as possible, the letter "a" if it was an artificial object or the letter "n" if it was a natural object. They were initially instructed that a natural object was something that could be found as is in the nature (e.g., strawberry, sheep, leaf), whereas an artificial object was something human-made/manufactured (e.g., airplane, clock, bottle). They were asked to classify 60 natural or artificial objects, and each trial included a prime.

After the priming task, participants were asked the following:

In some conditions of the artificial-natural object task, images of people's faces were quickly flashed. Have you noticed these faces? You may not have been in the condition where faces were flashed, and even if you were, most people do not see these faces. However, if you did see them, could you describe these people (e.g., male or female, attractive or not, young or old)? If you did not notice these faces, respond no.

Seven participants (4%) reported having seen at least one face. Deleting those participants did not alter any of the results; therefore, all participants were kept in the analyses.

Results and Discussion

Data analyses. Because the two types of passion were continuous variables, a regression analysis was conducted with interaction terms between each type of passion and the experimental conditions as dummy-coded variables ($k - 1$). Reaction times to the natural versus artificial objects tasks served as the dependent variable. Trials with errors were deleted, and RTs were transformed using a natural log function to reduce the influence of outliers, as recommended (Bargh & Chartrand, 2000). Given the type of participants recruited and the novelty of the priming method used, we enforced a number of validity checks. First, participants who did not get at least two thirds of the responses right were eliminated ($n = 12$), thus ensuring that all participants completed the task carefully or did not misread the instructions.⁵ Second, presentation time of each prime was recorded, given that all browsers and computers may not render the stimuli at the exact same presentation time. On average, prime presentation time was 25.50 ms ($SD = 13.67$ ms). Only two participants had presentation time above 45 ms (84 ms and 174 ms). However, these participants did not report having seen faces during the task and their exclusion did not alter the results. They were therefore kept in the final analyses.

Main data analyses. A one-way ANOVA revealed that there were significant differences among the conditions (i.e., attractive, low-average, mask) on the RTs, $F(2, 153) = 3.42$, $p < .05$. Orthogonal contrasts revealed that participants in the attractive condition had significantly slower RTs ($M = 7.15$ log-ms, $SD = 0.39$) than those in the low-average ($M = 7.02$ log-ms, $SD = 0.37$)

⁵ The sample size remains 156; these participants were excluded from the demographic data presented in the Participants section.

and mask conditions ($M = 6.96$ log-ms, $SD = 0.40$), $t(154) = 2.48$, $p < .05$, whereas the low-average and mask conditions did not differ against each other, $t(109) = 0.87$, *ns*. A multiple regression analysis was conducted with RTs during the task as the dependent variable, and HSP, OSP, and dummy coded variables (attractive = 0 or 1; low-attractive = 0 or 1) representing the groups, with the mask condition serving as the comparison condition (excluded variable). Interaction terms HSP \times Attractive, HSP \times Low-Attractive, OSP \times Attractive, and OSP \times Low-Attractive were added as independent variables. Results revealed a main effect of the attractive condition ($\beta = .21$, $p < .05$), but also significant HSP \times Attractive ($\beta = -.24$, $p < .05$) and OSP \times Attractive ($\beta = .22$, $p < .05$) interactions. There were no significant two-way or three-way interactions with gender.

Simple effects of the HSP \times Attractive interaction (see Figure 2a) revealed that RTs were significantly slower for participants with low HSP (-1 SD) when attractive versus average opposite-sex targets ($t = 2.35$, $p < .05$) or a background mask were primed ($t = 3.11$, $p < .01$). Conversely, there were no differences in RTs for participants with high HSP ($+1$ SD), whether they were primed with attractive or low-average opposite-sex people ($t = 0.50$, $p = .62$) or with a background mask ($t = -0.04$, *ns*). Simple effects of the OSP \times Attractive interaction (see Figure 2b) unveiled the exact opposite results. There was no difference between the experimental groups when OSP was low (-1 SD), all $ts < 0.85$, $p > .40$, but RTs were significantly slower when participants with high OSP ($+1$ SD) were primed with attractive versus low-average

opposite sex targets ($t = 2.17$, $p < .05$) or with a background mask ($t = 3.00$, $p < .01$).

These results show that HSP provides the person with a greater control over his sexual drive, as people with high HSP were not disturbed by the unconscious presentation of attractive targets, compared with average targets, and pursued their ongoing goal, paying full attention to the task at hand (identifying natural vs. artificial objects). Interestingly, high HSP appears to provide greater control over sexual drive than low HSP. Conversely, activation of sexual representations through the unconscious presentation of attractive targets in people with high OSP disrupted their focus from their ongoing goal, potentially by triggering implicit sex-related thoughts or goals. Because the presentation of the primes was unconscious, these results suggest that, with high OSP or low HSP, the mere activation of sexual representations (i.e., physically attractive targets) can conflict with people's ongoing goals before they even become aware of it.

Study 5b

To eliminate the uncertainty of the lower level of control in an online study over the priming and time reaction task, we replicated Study 5a in laboratory conditions with the software E-prime. In addition, only participants in couples were recruited to evaluate whether relationship quality would influence the results. Finally, we used only two conditions, the attractive and the low-average target priming conditions, because Study 5a showed no difference between the low-attractive and the background-mask conditions.

Method

Participants were 36 heterosexual undergraduate and graduate students engaged in a romantic relationship at the time of the study. Mean age was 26.31 years ($SD = 6.87$). At Time 1, they completed the Sexual Passion Scale (alphas were .70 and .85 for HSP and OSP) and the seven-item Perceived Relationship Quality Components Inventory ($\alpha = .85$; Fletcher et al., 2000a). At Time 2, 1 week later, they were invited to the lab to complete the last phase of the study. They were first instructed that they would complete a task (pictures priming task) with the ostensible aim of removing their daily thoughts before responding to other questionnaires. Participants were randomly assigned to the experimental (photos of attractive targets primed) or control (photos of low to average attractive targets primed) group. After the priming task, participants were probed for suspicion, were fully debriefed, and were paid \$10 for their participation. No participants reported having seen any of the primes.

Results

A multiple regression analysis was conducted with RTs during the task as the dependent variable, and HSP, OSP, conditions (0 = average, 1 = attractive), and their interaction terms (HSP \times Conditions and OSP \times Conditions) as independent variables. Results revealed significant HSP \times Conditions ($\beta = -.42$, $p < .05$) and OSP \times Conditions ($\beta = .45$, $p < .05$) interactions. Controlling for quality of the relationship, age, and gender did not

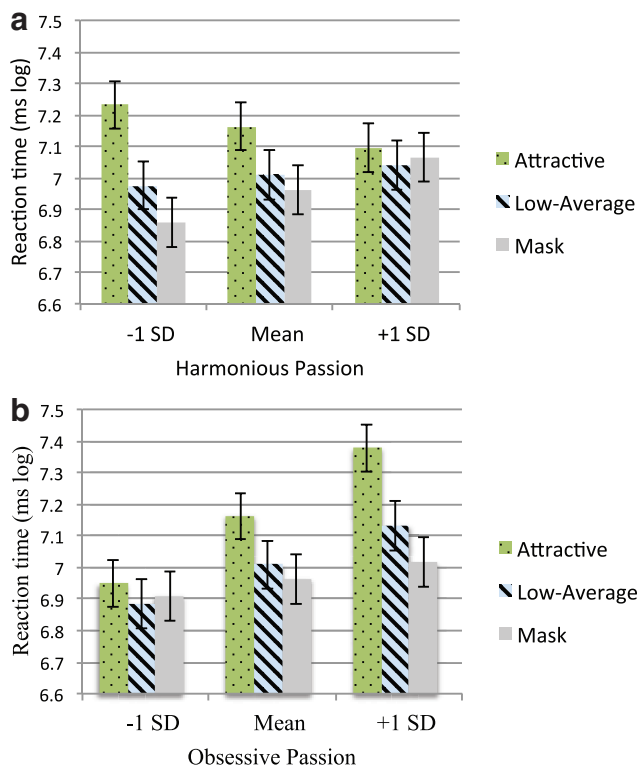


Figure 2. Study 5a: Interactions between experimental conditions and (a) HSP or (b) OSP on reaction times (log). See the online article for the color version of this figure.

affect these results. In addition, there were no significant two-way or three-way interactions with gender.⁶

Plotting of these interactions revealed the exact same pattern of results as that of Study 5a. Simple effects of the HSP \times Conditions interaction revealed that RTs were significantly slower for participants with low HSP (-1 *SD*) when attractive versus low-average opposite-sex people were primed ($t = 2.33, p < .05$). Conversely, there were no differences in RTs for participants with high HSP ($+1$ *SD*), whether they were primed with attractive or low-average opposite sex people ($t = 1.13, p = .27$). In addition, there was no difference between the two experimental groups when OSP was low (-1 *SD*; $t = 0.93, p = .35$), but RTs were significantly slower when participants with high OSP ($+1$ *SD*) were primed with attractive versus low-average opposite sex targets ($t = 2.71, p < .05$).

These findings support the hypothesis that the processing of sexual stimuli under HSP and OSP is different, with one facilitating attention on task goal and the other creating increasing conflict with it.

General Discussion

The present research investigated a new conceptualization of sexual passion. Drawing from motivational models in the field of passionate activities, passion was defined in terms of its intrapersonal motivational and cognitive determinants, without restraining it to interpersonal ramifications occurring with a partner. It was proposed that passion can lead to some of the same consequences experienced either as a single or in a romantic couple. In addition, the classical single-dimension conceptualization of sexual passion was extended to suggest that two forms of sexual passion exist, HSP and OSP, corresponding to specific mental organizations varying in their level of integration of sexual representations. The present research provided support for such a model of sexual passion by highlighting (a) the construct validity of a dualistic model of sexual passion assessing HSP and OSP, (b) the existence of both types of passion in singles as well as in people engaged in a romantic couple, and (d) the predictive and discriminant validity of each type of passion in regard of subjective, relational, and cognitive outcomes, including information-processing bias and goal conflict. Overall, the present research provides supporting evidence for the fruitfulness of a motivational, cognitive, and differentiated approach to sexual passion in order to understand both its intra and interpersonal outcomes.

Validity of a Dual Perspective on Sexual Passion

Study 1 provided support for a dual perspective of sexual passion. First, evidence of factorial validity of the Sexual Passion Scale was obtained, supporting two different types of sexual passion, HSP and OSP. The scale was found to be largely invariant to gender and relational status. This latter finding confirms that sexual passion can exist to the same extent in people either engaged with a romantic partner or single. HSP and OSP were also similarly correlated with the criteria of passion, underscoring that they both represent a type of sexual passion. Yet HSP and OSP were uncorrelated with each other and differentially predicted various subjective, relational, and cognitive outcomes related to sexuality.

A dualistic understanding of sexual passion appears to extend the classical single-dimension conceptualization. Indeed, conceptualizing sexual passion in terms of the intensity of one's sexual

desire or of one's attraction toward a partner can be a key defining component of sexual passion, but one that can also "miss the trees for the forest" when sexual passion is defined according to this sole criterion. Indeed, both HSP and OSP were found to be characterized by high levels of passion (Study 1) and high physical attraction to their romantic partner (Study 2)—yet they were shown to lead to dramatically different subjective, relational, and cognitive consequences. This underscores that the type of organization of the sexual representations and their expression into a particular type of sexual passion—not just their intensity or motivational components—is important to take into account.

On the Distinct Consequences of HSP and OSP

The present findings showed that the two types of sexual passion differed in the way sexual activities are experienced and in the way to which sexual stimuli are attended. Because OSP comes from a controlled internalization of sexual representations, those representations remain poorly integrated with other types of representations. Therefore, whenever a sexual stimulus is encountered, activation cannot freely flow to other types of representations, but rather remains constricted to sexual representations only. Consequently, sexuality is experienced as imposing itself on the person, which limits the range of positive cognitive and affective experiences that can be felt during sexual activities and can even lead to the experiences of negative emotions. Conflict between sexuality and other life spheres is frequent, and attention is easily disrupted by perceived sexual stimuli, leading to intrusive thoughts, biased processing of information, and precipitated, impulsive, and potentially ill-advised actions that are likely to lead to poor relational outcomes over time. Support was found for these hypotheses. OSP was found to be positively associated with some flow during sexual activities, but also with negative emotions. OSP was also found to be associated with intrusive thoughts, conflict, greater attentiveness to alternative partners, judgments of ambiguous situations and concepts biased toward sexuality, and disrupted attentional processing when sexual stimuli were unconsciously primed. OSP was also found to be associated with violent actions under romantic relational threat and dissolution of romantic relationships over time.

Conversely, with HSP, sexual representations are complexly integrated with relational representations and other life spheres. Consequently, whenever a sexual stimulus is encountered, activation expands into large and extended networks of representations and goals. This facilitates more socialized forms of expression of sexuality or a continuous focus on ongoing actions when deemed relevant, even when sexual stimuli are present in the environment. Sexuality is therefore subjectively experienced as integrated, which facilitates positive cognitive and affective experiences during sexual activities. Intrusive thoughts about sex, conflict between sexuality and other life spheres, and impulsive and ill-advised actions are thus much less frequent. Rather, HSP is more likely to be conducive to constructive relational outcomes over time. Results confirmed that HSP provides people with a more complex

⁶ Examination of the residuals revealed two somewhat extreme cases, but removing these participants from the analyses did not affect the results. Therefore, all participants were kept in the final analyses.

and integrated subjective experience during sexual activities and greater control over their attentional processes, even when sexual stimuli can potentially disrupt ongoing goals. Low HSP was associated with less control over one's ongoing goals compared with high HSP when sexual stimuli were unconsciously presented. HSP was also unrelated to attentiveness to alternative partners as reported by the participants and negatively associated with sexual intrusive thoughts. Given this greater integration and absence of conflict, HSP was expected to lead to actions that are self-endorsed and nonimpulsive, with a greater likelihood to be constructive over time. HSP was found to be positively associated with relationship quality and unrelated to violent actions under romantic relational threat and relationship dissolution over time.

These findings show that a dualistic conceptualization of sexual passion is a far-reaching construct that has several implications for the way sexuality is expressed and enacted, but also for a wide range of cognitive and attentional processes as various as cognitive conflict, task attentional processes, information-processing biases, and impulsive behaviors. These findings advance knowledge in areas as distinct as passion for activities, sexuality, and cognitive processing.

Integrating the Sexual System With the Relational System

Attachment theories (e.g., Mikulincer & Shaver, 2007) suggest that through adolescence and early adulthood, the sexual system begins to merge with the relational system, thereby being conducive to an integrated sexuality. The concepts of HSP and OSP appear to reflect important individual differences in the degree of integration of the relational and sexual systems. In line with what should constitute a mature and complex integration, we found that semantic sexual representations were more integrated with relational representations in HSP, but less integrated in OSP. More specifically, once the number of sexual semantic representations outweighed the number of relational semantic representations by more than the double, there was a marked increase in OSP and a marked decrease in HSP. This outlines that, at a certain level, OSP and HSP can begin to differ in important ways. These findings highlight how OSP and HSP, although both being characterized by high sexual passion, reflect two fundamentally different cognitive organizations in the way the relational and sexual systems are integrated, with each leading to clearly distinct consequences. It is also possible that with a HSP, sexual representations are also well integrated with other types of representations other than relational ones. This could constitute a fruitful future research avenue.

Sexual Passion and Sexual Compulsivity

The present findings make a clear case that considering a high frequency of engagement in sexuality as sexual compulsivity is extremely misleading (e.g., Rinehart & McCabe, 1997). Indeed, our results show that HSP is characterized by an engagement in sexuality as high as OSP, but such engagement in HSP seems to lead to an even more adequate functioning, which sets the ground for positive outcomes to emerge. Moreover, in Study 1, we examined whether each type of sexual passion interacted with the level of passion (assessed by the passion criteria) in their

associations with outcomes, and the results showed that it was not the case (detailed results can be obtained from the first author). This implies that both HSP and OSP start having an impact on outcomes even at low levels of passion, and that this impact increases monotonically as the level of passion increases. Thus, even at low levels of passion or engagement in sexual activities, HSP and OSP can influence important outcomes. Frequent sexual behavior is therefore not enough to understand the impact of sexuality in a person's life—it is also necessary to understand the mental organization composing the sexual system and the corresponding type of sexual passion underlying the behavior.

Finally, although the term *obsessive* is used, obsessive passion should not be equated with compulsive actions, such as in addictions or compulsive disorders. According to the dualistic model of passion (Vallerand, 2010, 2015), a passion entails that the person loves to engage in the passionate activity, whereas addictions (e.g., drinking, gambling) are diagnosed when they provoke clear and marked distress in the person's life and impaired daily functioning (Kafka, 2010). Although OSP was shown to be conducive to negative outcomes, it does not lead to distress, as shown by its null correlation with a distress measure in Study 3. In addition, Study 1 clearly shows that OSP is associated with the passion criteria, notably, loving and enjoying sex-related activities, which should not be the case with sexual addictions. HSP and OSP are therefore concepts that, although corresponding to frequent engagement in sexual activities, do not represent sexual compulsivity in terms of a psychiatric diagnosis. These are separate constructs.

Limitations

One potential limitation is that the samples from some studies were composed of few males compared with the number of females. It appears that study themes of romantic relationship and sexuality are more appealing to female than male participants. Consequently, interactions with gender might not have been detected in these studies because of a lack of power. Although some studies did include a sufficient number of males and did not show any distinct results related to gender, the fact that it was not possible to eliminate this uncertainty in the other studies constitutes a limitation (note, however, that even in these studies, we had a power of .70 to detect differences of medium effect size). A second limitation is that we did not manipulate the concept of sexual passion and that, therefore, we cannot address causality. Recent methodological advances have shown that it is possible to experimentally induce a harmonious or an obsessive passion for a particular activity and examine the immediate consequence of this induction (e.g., Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013; Lafrenière, Vallerand, & Sedikides, 2013). Future research could make use of such design and methodology to deepen our understanding of how HSP and OSP distinctively process external stimuli. Finally, the purpose of the present research was to investigate important consequences related to each type of sexual passion. However, we did not examine the specific mechanisms leading one type of sexual passion to a particular outcome (e.g., relationship dissolution). Future research should examine those mechanisms, which could further illuminate the distinction between HSP and OSP.

Overall, the present research provided novel evidence in support of a dual perspective of sexual passion based on an intraindividual motivational and cognitive conceptualization. This conceptualization appears useful and informative not only to better understand important intrapersonal consequences in the life of singles as well as couples, but also to explain the complex dyadic dynamics and outcomes occurring in romantic relationships, thus extending past research on the topic of sexual passion.

References

- Anderson, J. R. (1983). *The architecture of cognition*. Cambridge, MA: Harvard University Press.
- Bargh, J. A., & Chartrand, T. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–285). New York, NY: Cambridge University Press.
- Baumeister, R. F., & Bratslavsky, E. (1999). Passion, intimacy, and time: Passionate love as a function of change in intimacy. *Personality and Social Psychology Review*, 3, 49–67. http://dx.doi.org/10.1207/s15327957pspr0301_3
- Baumeister, R. F., Catanese, K. R., & Vohs, K. D. (2001). Is There a gender difference in strength of sex drive? Theoretical views, conceptual distinctions, and a review of relevant evidence. *Personality and Social Psychology Review*, 5, 242–273. http://dx.doi.org/10.1207/S15327957PSPR0503_5
- Beaulieu-Pelletier, G., Philippe, F. L., Lecours, S., & Couture, S. (2011). The role of attachment avoidance in extradyadic sex. *Attachment & Human Development*, 13, 293–313. <http://dx.doi.org/10.1080/14616734.2011.562419>
- Bélanger, J. J., Lafrenière, M.-A. K., Vallerand, R. J., & Kruglanski, A. W. (2013). When passion makes the heart grow colder: The role of passion in alternative goal suppression. *Journal of Personality and Social Psychology*, 104, 126–147. <http://dx.doi.org/10.1037/a0029679>
- Birnbaum, G. E. (2007). Attachment orientations, sexual functioning, and relationship satisfaction in a community sample of women. *Journal of Social and Personal Relationships*, 24, 21–35. <http://dx.doi.org/10.1177/0265407507072576>
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult romantic attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York, NY: Guilford Press.
- Carbonneau, N., & Vallerand, R. J. (2013). On the role of harmonious and obsessive romantic passion in conflict behavior. *Motivation and Emotion*, 37, 743–757. <http://dx.doi.org/10.1007/s11031-013-9354-5>
- Critelli, J. W., Myers, E. J., & Loos, V. E. (1986). The components of love: Romantic attraction and sex role orientation. *Journal of Personality*, 54, 354–370. <http://dx.doi.org/10.1111/j.1467-6494.1986.tb00399.x>
- Davis, D., Shaver, P. R., & Vernon, M. L. (2004). Attachment style and subjective motivations for sex. *Personality and Social Psychology Bulletin*, 30, 1076–1090. <http://dx.doi.org/10.1177/0146167204264794>
- Deci, E., & Ryan, R. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268. http://dx.doi.org/10.1207/S15327965PLI1104_01
- Derogatis, L. R. (1975). *The SCL-90-R*. Baltimore, MD: Clinical Psychometric Research.
- Diamond, L. M. (2003). What does sexual orientation orient? A biobehavioral model distinguishing romantic love and sexual desire. *Psychological Review*, 110, 173–192. <http://dx.doi.org/10.1037/0033-295X.110.1.173>
- di Fraia, G. (1991). *La passione amorosa* [Loving passion]. Milan, Italy: Harlequin Mondadori.
- Dijkstra, P., & Buunk, B. P. (1998). Jealousy as a function of rival characteristics: An evolutionary perspective. *Personality and Social Psychology Bulletin*, 24, 1158–1166. <http://dx.doi.org/10.1177/01461672982411003>
- Donahue, E. G., Rip, B., & Vallerand, R. J. (2009). When winning is everything: On passion, identity, and aggression in sport. *Psychology of Sport and Exercise*, 10, 526–534. <http://dx.doi.org/10.1016/j.psychsport.2009.02.002>
- Feeney, J. A., & Noller, P. (1992). Attachment style and romantic love: Relationship dissolution. *Australian Journal of Psychology*, 44, 69–74.
- Fletcher, G., Simpson, J., & Thomas, G. (2000a). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin*, 26, 340–354. <http://dx.doi.org/10.1177/0146167200265007>
- Fletcher, G. J., Simpson, J. A., & Thomas, G. (2000b). Ideals, perceptions, and evaluations in early relationship development. *Journal of Personality and Social Psychology*, 79, 933–940. <http://dx.doi.org/10.1037/0022-3514.79.6.933>
- Forest, J., Mageau, G. A., Sarrazin, C., & Morin, E. M. (2011). “Work is my passion”: The different affective, behavioural, and cognitive consequences of harmonious and obsessive passion toward work. *Canadian Journal of Administrative Sciences*, 28, 27–40. <http://dx.doi.org/10.1002/cjas.170>
- Gailliot, M. T., & Baumeister, R. F. (2007). Self-regulation and sexual restraint: Dispositionally and temporarily poor self-regulatory abilities contribute to failures at restraining sexual behavior. *Personality and Social Psychology Bulletin*, 33, 173–186. <http://dx.doi.org/10.1177/0146167206293472>
- Goldie, K. L., & van Anders, S. M. (2012). Sexual arousal and desire: Interrelations and responses to three modalities of sexual stimuli. *Journal of Sexual Medicine*, 9, 2315–2329. <http://dx.doi.org/10.1111/j.1743-6109.2012.02845.x>
- Granvold, D. K. (2001). Promoting long term sexual passion. *Constructivism in the Human Sciences*, 6, 73–83.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85, 197–216. <http://dx.doi.org/10.1037/0022-3514.85.2.197>
- Hatfield, E., & Sprecher, S. (1986). Measuring passionate love in intimate relationships. *Journal of Adolescence*, 9, 383–410. [http://dx.doi.org/10.1016/S0140-1971\(86\)80043-4](http://dx.doi.org/10.1016/S0140-1971(86)80043-4)
- Hatfield, E., & Walster, G. W. (1978). *A new look at love*. Reading, MA: Addison Wesley.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511–524. <http://dx.doi.org/10.1037/0022-3514.52.3.511>
- Houliort, N. L., Philippe, F. J., Vallerand, R., & Ménard, J. (2014). On passion and heavy work investment: Personal and organizational outcomes. *Journal of Managerial Psychology*, 29, 25–45. <http://dx.doi.org/10.1108/JMP-06-2013-0155>
- Jackson, S. A., & Eklund, R. C. (2002). Assessing flow in physical activity: The Flow State Scale-2 and Dispositional Flow Scale-2. *Journal of Sport & Exercise Psychology*, 24, 133–150.
- Jackson, S. A., & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: The Flow State Scale. *Journal of Sport & Exercise Psychology*, 18, 17–35.
- Kafka, M. P. (2010). Hypersexual disorder: A proposed diagnosis for DSM-V. *Archives of Sexual Behavior*, 39, 377–400. <http://dx.doi.org/10.1007/s10508-009-9574-7>
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. *Advances in Experimental Social Psychology*, 29, 331–378. [http://dx.doi.org/10.1016/S0065-2601\(02\)80008-9](http://dx.doi.org/10.1016/S0065-2601(02)80008-9)
- Lafrenière, M.-A. K., Vallerand, R. J., Donahue, E. G., & Lavigne, G. L. (2009). On the costs and benefits of gaming: The role of passion.

- CyberPsychology & Behavior*, 12, 285–290. <http://dx.doi.org/10.1089/cpb.2008.0234>
- Lafrenière, M.-A. K., Vallerand, R. J., & Sedikides, C. (2013). On the relation between self-enhancement and life satisfaction: The moderating role of passion. *Self and Identity*, 12, 597–609. <http://dx.doi.org/10.1080/15298868.2012.713558>
- Le, B., Dove, N. L., Agnew, C. R., Korn, M. S., & Mutso, A. A. (2010). Predicting nonmarital romantic relationship dissolution: A meta-analytic synthesis. *Personal Relationships*, 17, 377–390. <http://dx.doi.org/10.1111/j.1475-6811.2010.01285.x>
- Levine, S. B. (2003). The nature of sexual desire: A clinician's perspective. *Archives of Sexual Behavior*, 32, 279–285. <http://dx.doi.org/10.1023/A:1023421819465>
- Mageau, G. A., Vallerand, R. J., Rousseau, F. L., Ratelle, C. F., & Provencher, P. J. (2005). Passion and gambling: Investigating the divergent affective and cognitive consequences of gambling. *Journal of Applied Social Psychology*, 35, 100–118. <http://dx.doi.org/10.1111/j.1559-1816.2005.tb02095.x>
- Marsh, H. W., Vallerand, R. J., Lafrenière, M.-A. K., Parker, P., Morin, A. J. S., Carbonneau, N., . . . Paquet, Y. (2013). Passion: Does one scale fit all? Construct validity of two-factor passion scale and psychometric invariance over different activities and languages. *Psychological Assessment*, 25, 796–809. <http://dx.doi.org/10.1037/a0032573>
- Meyers, S. A., & Berscheid, E. (1997). The language of love: The difference a preposition makes. *Personality and Social Psychology Bulletin*, 23, 347–362. <http://dx.doi.org/10.1177/0146167297234002>
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment patterns in adulthood: Structure, dynamics, and change*. New York, NY: Guilford Press.
- Miller, R. S. (1997). Inattentive and contented: Relationship commitment and attention to alternatives. *Journal of Personality and Social Psychology*, 73, 758–766. <http://dx.doi.org/10.1037/0022-3514.73.4.758>
- Mosher, D. L., Barton-Henry, M., & Green, S. E. (1988). Subjective sexual arousal and involvement: Development of multiple indicators. *Journal of Sex Research*, 25, 412–425. <http://dx.doi.org/10.1080/00224498809551471>
- Penke, L., & Asendorpf, J. B. (2008). Beyond global sociosexual orientations: A more differentiated look at sociosexuality and its effects on courtship and romantic relationships. *Journal of Personality and Social Psychology*, 95, 1113–1135. <http://dx.doi.org/10.1037/0022-3514.95.5.1113>
- Philippe, F. L., & Bernard-Desrosiers, L. (2016). The odyssey of episodic memories: Identifying the paths and processes through which they contribute to well-being. *Journal of Personality*. <http://dx.doi.org/10.1111/jopy.12257>
- Philippe, F. L., Vallerand, R. J., Houffort, N., Lavigne, G. L., & Donahue, E. G. (2010). Passion for an activity and quality of interpersonal relationships: The mediating role of emotions. *Journal of Personality and Social Psychology*, 98, 917–932. <http://dx.doi.org/10.1037/a0018017>
- Philippe, F. L., Vallerand, R. J., Richer, I., Vallières, E., & Bergeron, J. (2009). Passion for driving and aggressive driving behavior: A look at their relationship. *Journal of Applied Social Psychology*, 39, 3020–3043. <http://dx.doi.org/10.1111/j.1559-1816.2009.00559.x>
- Przybylski, A. K., Weinstein, N., Ryan, R. M., & Rigby, C. S. (2009). Having to versus wanting to play: Background and consequences of harmonious versus obsessive engagement in video games. *CyberPsychology & Behavior*, 12, 485–492. <http://dx.doi.org/10.1089/cpb.2009.0083>
- Ratelle, C. F., Carbonneau, N., Vallerand, R. J., & Mageau, G. (2013). Passion in the romantic sphere: A look at relational outcomes. *Motivation and Emotion*, 37, 106–120. <http://dx.doi.org/10.1007/s11031-012-9286-5>
- Rinehart, N. J., & McCabe, M. P. (1997). Hypersexuality: Psychopathology or normal variant of sexuality? *Sexual & Marital Therapy*, 12, 45–60. <http://dx.doi.org/10.1080/02674659708408201>
- Rip, B., Fortin, S., & Vallerand, R. J. (2006). The relationship between passion and injury in dance students. *Journal of Dance Medicine & Science*, 10, 14–20.
- Rosen, C. S., Drescher, K. D., Moos, R. H., Finney, J. W., Murphy, R. T., & Gusman, F. (2000). Six- and ten-item indexes of psychological distress based on the Symptom Checklist-90. *Assessment*, 7, 103–111. <http://dx.doi.org/10.1177/107319110000700201>
- Simpson, J. A., & Gangestad, S. W. (1991). Individual differences in sociosexuality: Evidence for convergent and discriminant validity. *Journal of Personality and Social Psychology*, 60, 870–883. <http://dx.doi.org/10.1037/0022-3514.60.6.870>
- Steele, V. R., Staley, C., Fong, T., & Prause, N. (2013). Sexual desire, not hypersexuality, is related to neurophysiological responses elicited by sexual images. *Socioaffective Neuroscience & Psychology*, 3, 20770. <http://dx.doi.org/10.3402/snp.v3i0.20770>
- Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, 93, 119–135. <http://dx.doi.org/10.1037/0033-295X.93.2.119>
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72, 271–324. <http://dx.doi.org/10.1111/j.0022-3506.2004.00263.x>
- Vallerand, R. J. (2010). On passion for life activities: The dualistic model of passion. *Advances in Experimental Social Psychology*, 42, 97–193. [http://dx.doi.org/10.1016/S0065-2601\(10\)42003-1](http://dx.doi.org/10.1016/S0065-2601(10)42003-1)
- Vallerand, R. J. (2015). *The psychology of passion: A dualistic model*. New York, NY: Oxford University Press. <http://dx.doi.org/10.1093/acprof:oso/9780199777600.001.0001>
- Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Leonard, M., . . . Marsolais, J. (2003). Les passions de l'âme: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85, 756–767. <http://dx.doi.org/10.1037/0022-3514.85.4.756>
- Vallerand, R. J., Ntoumanis, N., Philippe, F. L., Lavigne, G. L., Carbonneau, N., Bonneville, A., . . . Maliha, G. (2008). On passion and sports fans: A look at football. *Journal of Sports Sciences*, 26, 1279–1293. <http://dx.doi.org/10.1080/02640410802123185>
- Vallerand, R. J., Paquet, Y., Philippe, F. L., & Charest, J. (2010). On the role of passion for work in burnout: A process model. *Journal of Personality*, 78, 289–312. <http://dx.doi.org/10.1111/j.1467-6494.2009.00616.x>
- Vallerand, R. J., Rousseau, F. L., Grouzet, F. M. E., Dumais, A., & Grenier, S. (2006). Passion in sport: A look at determinants and affective experiences. *Journal of Sport & Exercise Psychology*, 28, 454–478.
- Vallerand, R. J., Salvy, S.-J., Mageau, G. A., Elliot, A. J., Denis, P. L., Grouzet, F. M. E., & Blanchard, C. (2007). On the role of passion in performance. *Journal of Personality*, 75, 505–534. <http://dx.doi.org/10.1111/j.1467-6494.2007.00447.x>
- Vohs, K. D., & Baumeister, R. F. (2004). Sexual passion, intimacy, and gender. In D. J. Mashek & A. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 189–200). Mahwah, NJ: Erlbaum.
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, 88, 187–204. <http://dx.doi.org/10.1080/00223890701268041>
- Whisman, M. A., Tolejko, N., & Chatav, Y. (2007). Social consequences of personality disorders: Probability and timing of marriage and probability of marital disruption. *Journal of Personality Disorders*, 21, 690–695. <http://dx.doi.org/10.1521/pe.2007.21.6.690>
- Yela, C. (2006). The evaluation of love. *European Journal of Psychological Assessment*, 22, 21–27. <http://dx.doi.org/10.1027/1015-5759.22.1.21>

Received November 30, 2015

Revision received July 4, 2016

Accepted July 21, 2016 ■