

On The Costs and Benefits of Gaming: The Role of Passion

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Marc-André K. Lafrenière, Robert J. Vallerand, Ph.D., Eric G. Donahue, and Geneviève L. Lavigne

Abstract

The dualistic model of passion defines passion as a strong inclination toward a self-defining activity that a person likes and values and in which he or she invests time and energy. The model proposes two distinct types of passion: harmonious and obsessive passion that predict adaptive and less adaptive outcomes respectively. In the present research, we were interested in assessing both the negative and positive consequences that can result from gaming. Participants ($n = 222$) were all players involved in massively multiplayer online games. They completed an online survey. Results from a canonical correlation revealed that both harmonious and obsessive passion were positively associated with the experience of positive affect while playing. However, only obsessive passion was also positively related to the experience of negative affect while playing. In addition, only obsessive passion was positively related to problematic behaviors generally associated with excessive gaming, the amount of time spent playing, and negative physical symptoms. Moreover, obsessive passion was negatively related to self-realization and unrelated to life satisfaction. Conversely, harmonious passion was positively associated with both types of psychological well-being. This general pattern of results suggests that obsessive passion for gaming is an important predictor of the negative outcomes of gaming, while harmonious passion seems to account for positive consequences. Future research directions are discussed in light of the dualistic model of passion.

Introduction

WORLDWIDE, THE VIDEO GAME INDUSTRY is one of the largest forms of entertainment, with annual revenues surpassing those of Hollywood.¹ Many scholars believe that video games have a significant impact on human functioning. However, most disagree as to whether these effects are helpful or harmful. Some scholars have shown that positive outcomes, such as higher psychological adjustment and improved learning,^{2,3} can be derived from playing video games. Others have shown that involvement in video games generates a number of negative effects, such as lower psychological adjustment, lower productivity, and impoverished social relationships.^{4,5} Given that individuals play video games for various reasons, it seems obvious that video game involvement has the potential to produce both negative and positive outcomes. For most players, gaming is a source of pleasure, entertainment, and harmless distraction. For others, however, it can have profound negative psychological consequences. It is reasonable to suggest that the different ways of becoming involved in gaming can greatly influence how this activity will be experienced.

The Dualistic Model of Passion

The concept of passion

Vallerand et al.⁶ proposed a conceptualization of passion that can shed light on the psychological mechanisms underlying activity involvement in general and gaming involvement specifically. This motivational perspective of passion distinguishes two types of passion: harmonious and obsessive passion. Both types of passion refer to a strong inclination toward a self-defining activity that an individual likes, finds important, and in which he or she invests a significant amount of time and energy.⁶ However, fundamental theoretical distinctions separate the two types of passion. Harmonious passion refers to a motivation to engage in the activity willingly with a sense of personal volition being derived from activity engagement. Since people freely engage in their passionate activity, time and resources can be managed to accommodate every aspect of their lives. Consequently, harmonious passion for an activity should not instigate conflict with an individual's other life domains. Obsessive passion is characterized by an uncontrollable urge that forces people to partake in the activity they view as important.

Feeling compelled to engage in the activity, people with an obsessive passion are likely to neglect other areas of their life. Consequently, with obsessive passion, people risk experiencing conflicts with other life domains.

Both harmonious and obsessive passion pertain to activities that acquire such importance for the person that they become a central feature of his or her identity. For instance, those who have a passion for gaming do not simply play video games. They are “gamers.” Moreover, the dualistic model of passion⁶ posits that harmonious and obsessive passion can be differentiated in terms of how the passionate activity has been internalized into a person’s identity. Past research has shown that values and regulations concerning noninteresting activities can be internalized in either a controlled or an autonomous fashion in a person’s identity.⁷ Along the same lines, Vallerand et al.⁶ proposed that these two internalization processes may occur with interesting and loved activity. Moreover, those divergent internalization processes should determine the type of passion that will be held toward the activity. Harmonious passion results from an autonomous internalization of the activity into the person’s identity. This process occurs when individuals greatly enjoy the activity and have willingly accepted the activity as important for them without any contingencies attached to it. With harmonious passion, the activity occupies an important but not overwhelming space in people’s identity. When harmonious passion is at play, individuals do not experience an uncontrollable urge to engage in the passionate activity but rather freely choose to do so. Activity engagement is personally endorsed and remains under the people’s control. Consequently, harmonious passion for an activity should allow individuals to engage in the activity with an openness that is favorable to positive experiences.⁸

AU2 ▶ Conversely, obsessive passion results from a controlled internalization of the activity into people’s identity. This process originates from intrapersonal and/or interpersonal pressure because particular contingencies, such as self-worth, are attached to the activity. Individuals with an obsessive passion are motivated to engage in their activity in order to satisfy those particular contingencies. Thus, to the extent that activity engagement permits fulfillment of those contingencies, individuals with an obsessive passion will engage in the activity with enthusiasm. However, individuals with an obsessive passion do not open-mindedly experience their activity but mainly focus on contingency-relevant information and events. Consequently, obsessive passion for an activity forces individuals to engage in the passionate activity in a rigid and narrow-minded manner that is detrimental to experiences.⁸ Therefore, even though they may derive some pleasure from participation, individuals with an obsessive passion are at risk of experiencing negative affective, cognitive, and behavioral consequences while engaging in their passionate activity.

Research provides empirical support for the passion conceptualization. Results from exploratory and confirmatory factor analyses supported the two-factor structure of the Passion scale.⁶ Results using the Passion scale demonstrated that both types of passion were positively correlated with the activity being perceived as part of people’s identity as measured by the Inclusion of Other in the Self scale.⁹ Furthermore, both harmonious and obsessive passion were found to be positively correlated with measures of activity valuation

and measures of the activity being perceived as a passion.⁶ However, the two types of passion were found to lead to different predictions with respect to various outcomes. Harmonious passion has been positively correlated with psychological adjustment indices^{6,10} and positively associated with positive experiences, such as positive emotions and flow, during activity engagement.^{6,11} Obsessive passion was positively correlated with negative emotions during activity engagement^{10,11} and negatively related or else unrelated to indices of psychological adjustment.^{10,11} Obsessive passion also was found to be a risk factor for health through the rigid persistence that it engenders.^{6,12}

Passion and gaming

The dualistic model of passion was recently applied to Internet¹³ and video games.^{14,15} Séguin-Lévesque et al.¹³ showed that obsessive passion for the Internet undermines dyadic adjustment and generates conflicts between the passionate activity and individuals’ romantic relationship. In contrast, harmonious passion toward the Internet was associated with greater dyadic adjustment and less conflict. Wang et al.,¹⁵ using cluster analyses, found that passionate individuals experienced more flow and positive affect while playing and played more per week as compared to less passionate individuals. They did not differentiate between harmonious and obsessive passion in their cluster analyses, so the scope of these findings is not clear because the crucial distinction between harmonious and obsessive passion is not accounted for. Wang and Chiu¹⁴ showed that both types of passion are differently related to problematic gaming. Specifically, obsessive passion was found to be positively related to problematic gaming, while harmonious passion was unrelated to it. Taken together, these results provide initial support for the conceptualization of passion in gaming, with obsessive passion being more strongly associated than harmonious passion with problematic gaming. However, while the research conducted to date is very encouraging, additional research is needed in order to better understand the role of passion in a broader set of gaming outcomes. ◀ AU3

The Present Research

The specific goals of the present research were threefold. First, we sought to explore the role of passion in the affective experiences of players while gaming. In line with past research,^{6,11} we hypothesized that harmonious passion for gaming should lead to the experience of positive affect while playing and that obsessive passion would be positively related to both positive and negative affect while playing. Obsessive passion has been generally found to be negatively related or else unrelated to positive affect.^{6,11} However, we believe that individuals with an obsessive passion engage in their activity in order to gain release from the internal pressure caused by particular contingencies attached to the activity. In a diary study, Mageau and Vallerand¹⁶ demonstrated that the more people have an obsessive passion, the more they experience an accentuated decrease in subjective well-being on days when they do not engage in their passionate activity compared to days when they do. Accordingly, even if they feel compelled to play video games, people with an obsessive passion should still derive some pleasure from the relief brought about by appeasing their longing for

gaming. However, they should simultaneously experience negative affect such as anxiety and shame because, more often than not, they engage in the activity when they should not.

The second objective of the present work was to explore the role of passion in problematic gaming. In line with past research on gaming,¹⁴ we posited that obsessive passion should be positively related to problematic behaviors usually associated with excessive play, such as getting irritable or restless when prevented from playing, using video games as a way to escape from problems, and being unable to cut back or stop playing when deliberately trying to do so. Accordingly, we also hypothesized that obsessive passion should be positively related to time spent gaming. Conversely, those behaviors should be unrelated to harmonious passion.

The third objective was to explore the role of passion for gaming in the psychological and physical well-being of players. In line with past research,^{10,11} we posited that harmonious passion should be positively related to psychological adjustment (life satisfaction and self-realization), while obsessive passion should be either negatively related or else unrelated to psychological adjustment. Moreover, since individuals with obsessive passion persist in the activity no matter what happens, we hypothesized that obsessive passion for gaming should be detrimental to people's health. For instance, people might play for excessively long periods of time despite eye fatigue or may disregard hunger to avoid disrupting play. Over time, such rigid practices can damage general health. Harmonious passion should be unrelated to physical symptoms. Because with harmonious passion the activity remains under people's control, time and resources can be managed to accommodate other aspects of their lives. Consequently, harmoniously passionate people should be able to keep away from unhealthy behaviors.

Method

Participants

Participants were 222 players (191 males and 31 females) involved in massively multiplayer online (MMO) gaming (e.g., EverQuest, Lord of the Ring Online, World of Warcraft). The mean age of the participants was 23.13 years ($SD = 8.26$ years). On average, participants played their preferred MMO game for 22.10 hours per week ($SD = 17.73$ hours) and had been playing this game for 2.15 years ($SD = 2.28$ years).

Procedure

Participation was voluntary. No incentive was given in exchange for participation. Participants completed the questionnaire through an online survey. A call for voluntary participation was posted on online forums dedicated to MMO games. IP addresses were checked to detect potential duplicate responders. No such duplicates were identified.

Measures

Passion toward gaming. Players' passion toward gaming was assessed using a short version of the Passion scale.⁶ Participants were asked to complete the scale's items with regard to their preferred MMO game. The items were adapted to refer to a MMO game or the act of gaming. To make the questionnaire as short as possible and thus ensure maximum

participation, a short version of the Passion scale was used. Two 3-item subscales were used to assess harmonious and obsessive passion (sample item for harmonious passion: "My preferred MMO game [e.g., World of Warcraft] is in harmony with other activities in my life"; $\alpha = 0.75$; sample item for obsessive passion: "I have difficulties controlling my urge to play my preferred MMO game [e.g., World of Warcraft]"; $\alpha = 0.84$). Pretest data with MMO players ($n = 147$) revealed that these short subscales were equivalent to the long version as the short and long versions of the Passion scale were correlated at 0.89 and 0.97 for the harmonious and obsessive passion subscales, respectively. This scale was completed on a 7-point Likert scale ranging from 1, *do not agree at all*, to 7, *very strongly agree*. All other scales presented below were completed on the same 7-point Likert scale unless specified otherwise.

Positive and negative affect. Participants' affective experiences while gaming were measured using two 4-item subscales assessing positive (e.g., "In general while gaming, I feel excited"; $\alpha = 0.82$) and negative affect (e.g., "In general while gaming, I feel worried"; $\alpha = 0.80$) taken from Barrett and Russell.¹⁷

Problematic behaviors. Players' problematic behaviors associated with excessive gaming were assessed using nine items (e.g., "In general when I cannot play my preferred MMO game, I get restless or irritable"; $\alpha = 0.91$) taken from Tejeiro and Morán.¹⁸

Satisfaction with life. Participants' life satisfaction was measured using five items (e.g., "In general, my life is close to my ideal."; $\alpha = 0.91$) from the Satisfaction with Life scale.¹⁹

Self-realization. Participants' self-realization was assessed using seven items (e.g., "In general, in my life, I am an active person in carrying out the plans I set for myself"; $\alpha = 0.77$) taken from Miquelón and Vallerand.²⁰

Physical symptoms. Physical symptoms were assessed using a symptom checklist composed of five items adapted from an instrument developed by Knäuper et al.²¹ The scale assesses a set of symptoms typically related to excessive gaming (i.e., appetite loss, dizziness or/and lightheadedness, dry eyes, sleep disorders, and tremors or/and numbness; $\alpha = 0.75$). Participants were asked how often they have experienced these symptoms over the past month using a 7-point Likert scale ranging from 1, *never*, to 7, *almost always*.

Results

There was no missing value in the present research because the online survey required that participants answer all items of a given variable. Inspection of the skewness and kurtosis indices for most variables proved to be normal (values ranged from -0.33 to 1.43 for skewness and from -0.93 to 1.54 for kurtosis) except for negative affect, hours per week, problematic behaviors, and physical symptoms. These variables were skewed and were log transformed in order to approach normality. Means, standard deviations, and canonical correlations are presented in Table 1.

The relationships of harmonious passion and obsessive passion to outcomes were assessed with canonical correlation

TABLE 1. MEANS, STANDARD DEVIATIONS, AND CANONICAL CORRELATIONS ($N=222$)

			Canonical variate	
			1	2
Canonical correlation ¹			0.81*	0.45*
	<i>M</i>	<i>SD</i>	<i>Independent variables</i>	
Harmonious passion	4.14	1.47	0.08	0.94
Obsessive passion	2.22	1.38	0.99	-0.05
Age	23.13	8.26	-0.10	-0.26
Gender ²	0.86	0.35	0.11	0.06
Redundancy coefficient			0.17	0.05
	<i>M</i>	<i>SD</i>	<i>Dependent variables</i>	
Positive affect	3.60	1.36	0.65	0.68
Negative affect	1.76	1.02	0.54	-0.27
Problematic behaviors	2.77	1.45	0.91	-0.23
Hours per week	21.10	17.73	0.54	0.10
Life satisfaction	3.98	1.61	-0.10	0.70
Self-realization	4.77	1.15	-0.40	0.71
Physical symptoms	1.85	1.02	0.49	-0.19
Redundancy coefficient			0.21	0.05

¹First canonical correlation: $F(28, 754) = 11.68, p < 0.001$; second canonical correlation: $F(18, 594) = 3.08, p < 0.001$.

²Female = 0, male = 1.

* $p < 0.001$.

analysis (CCA).²² CCA is a form of multivariate multiple regression analysis that assesses the relationships between a set of independent variables and a set of dependent variables. In the present study, the independent variables included harmonious and obsessive passion, age, and gender; the dependent variables included positive and negative affect, problematic behaviors, hours per week invested in the preferred MMO game, life satisfaction, self-realization, and physical symptoms. As in factor analysis, the minimum loading used to assign a variable to a canonical variate is based on a rule of thumb rather than a statistical test. In the present study, a minimum loading of 0.40 was required for a variable to be considered significant on a canonical variate.²²

Two canonical correlations were significant. The first canonical correlation was 0.81, $F(28, 754) = 11.68, p < 0.001$. The canonical variate for the independent set primarily represented obsessive passion, which had a loading of 0.99. The canonical variate for the dependent set represented positive (0.65) and negative affect (0.54), problematic behaviors (0.91), hours per week invested in the preferred MMO game (0.54), self-realization (-0.40), and physical symptoms (0.49). The redundancy coefficients were 0.17 and 0.21 for the independent and dependent sets, respectively. The redundancy coefficient is interpreted as the percentage of variance of the original variables in one set predicted by the canonical variate of the other set within the same canonical correlation.²² Thus, controlling for age and gender, high obsessive passion was positively related to positive as well as negative affective experiences while gaming, problematic behavior, physical symptoms, and hours per week invested in the preferred MMO game and was negatively related to self-realization. The second canonical correlation was .45, $F(18,$

594) = 3.08, $p < 0.001$. The canonical variate for the independent set primarily represented harmonious passion, which had a loading of 0.94. The canonical variate for the dependent set represented positive affect (0.68), life satisfaction (0.70), and self-realization (0.71). The redundancy coefficients were 0.05 for both the independent and dependent sets. Thus, controlling for age and gender, high harmonious passion was positively related to positive affective experiences, life satisfaction, and self-realization.

Discussion

The present study had three major objectives. First, we investigated the role of passion in the affective experiences of players while gaming. Second, we explored the role of passion in problematic gaming. Third, we explored the role of passion for gaming in the psychological as well as physical well-being of players. The present findings primarily showed that while obsessive passion may contribute to positive affect, it is mainly an important predictor of negative gaming outcomes. However, harmonious passion seems to account for the positive consequences of gaming. These findings lead to a number of implications.

Passion and affective experiences

A first implication is that passion matters with respect to affective gaming experiences. It appears that harmonious and obsessive passion for gaming are both conducive to positive affective experiences while gaming. However, it appears that obsessive passion also leads to the experience of negative affect while playing. These conclusions are in line with those of previous research,^{6,11} which found that having a harmonious passion leads to the experience of positive affect, while obsessive passion was conducive to the experience of negative affect. Noticeably, the present findings suggest some differences with past research. Past research has typically found obsessive passion to be negatively related or else unrelated to positive affect in a variety of life domains.^{6,11} However, in the present research, we posited that people with an obsessive passion should derive pleasure from the relief brought about by appeasing their longing for gaming. Accordingly, the present findings show that the relationship between obsessive passion for gaming and the experience of positive affect while playing is positive. Future research is needed in order to replicate the present findings and to determine more clearly if harmonious passion and obsessive passion lead to different types of positive affect (e.g., relief vs. joy).

Passion and problematic gaming

The dualistic model of passion⁶ regards people with an obsessive passion as individuals who cannot resist the urge to engage in their favorite activity as it comes to dominate their lives. In view of that, obsessive passion may represent the psychological mechanism responsible for the lack of control observed in problematic gaming and may therefore represent a precursor of problematic gaming. In line with this hypothesis, results from the present research showed that obsessive passion was positively associated with potential indicators of problematic gaming such as behaviors usually associated with excessive gaming and time spent playing, while harmonious passion was unrelated to such indicators.

These results are in line with those of previous findings^{14,15} that having an obsessive passion for gaming is positively related to problematic gaming and time spent gaming, while harmonious passion is unrelated to such consequences. Equally important is that the dualistic model of passion,⁶ contrary to other conceptualizations of problematic gaming, distinguishes between two types of players who can both be just as passionate for gaming but who experience very different consequences as a result of their passion. Future research on the development of passion might shed light on the underlying mechanisms leading individuals to become problematically involved in gaming.

Passion and well-being

Results from the current research revealed that harmonious passion for gaming positively predicts life satisfaction and self-realization, while obsessive passion is unrelated to life satisfaction and negatively predicts self-realization. The present findings are in line with previous findings^{10,11} that harmonious passion is beneficial to people's psychological adjustment, while obsessive passion is unbeneficial or even detrimental to it. Nevertheless, the results with respect to life satisfaction and self-realization deserve special attention. In the psychological well-being literature, this construct is divided in two dimensions: hedonic and eudaimonic well-being.²³ The hedonic viewpoint defines well-being as the subjective feeling of happiness, the seeking of pleasure, and the avoidance of displeasure. The eudaimonic approach defines well-being as a complete human life through seeking the realization of one's true potential. Consequently, life satisfaction corresponds to a form of hedonic well-being, whereas self-realization corresponds to a form of eudaimonic well-being. Thus, the present results showed that obsessive passion for gaming was unrelated to hedonic well-being but was detrimental to eudaimonic well-being. It seems that players with an obsessive passion for gaming are on an affective roller coaster where their hedonic well-being is contingent on their affective experiences during gaming. Players with an obsessive passion experience both positive and negative affect while playing. This phenomenon might explain why obsessive passion is not conducive to high levels of life satisfaction. However, this emotional instability may be damaging for optimal human flourishing and could explain why obsessive passion is negatively related to eudaimonic well-being (i.e., self-realization). Future research with daily affective measures using diary methodology is needed in order to test this hypothesis and understand further the role of obsessive and harmonious passion in gamers' hedonic and eudaimonic well-being.

Furthermore, we posited that since obsessive passion entails a rigid persistence in the activity no matter what happens, it should result in harmful consequences for people's physical health. On the other hand, with harmonious passion, the activity remains under the individuals' control, and people should therefore be able to prevent hurtful consequences to their health. Results from the present research supported these hypotheses. Obsessive passion for gaming was found to be positively associated with physical symptoms typically related to excessive gaming, while harmonious passion was unrelated to such physical symptoms. Moreover, the present findings are in line with those of previous research,^{6,12} which found that

obsessive passion is a risk factor for people's health, while harmonious passion is the most optimal motivational foundation for healthful involvement. Future research is needed in order to reproduce the present findings with more objective measures such as medical records.

Limitations

Some limitations of the present research need to be underscored. First, the correlational design used in the present study does not allow us to infer causal inferences. Consequently, researchers should try to replicate the present findings using experimental designs in order to clearly establish the directionality of effects. Second, the study took place only at one point in time. It would be important to conduct longitudinal or prospective research in order to determine the role of passion in predicting the *changes* in psychological and physical health. Third, the sample contained a larger proportion of men ($n = 191$) than women ($n = 31$). This drawback did not permit us to investigate the issue of gender differences. Future research should look into this issue. Finally, in the present research, only MMO games were studied. Therefore, it is possible that some findings of the present research would not be found with other types of video games given the specific nature of MMO games. Future research should try to replicate the present findings with different types of video games.

Despite these methodological limitations, this work offers a general theoretical framework to study gaming involvement. Overall, the present findings suggest that passion matters for players with respect to their affective experiences while gaming and to their psychological as well as physical health resulting from gaming. It appears that there are two distinct ways of becoming involved in gaming and that both types of passion lead to different consequences. Whereas some people experience positive consequences when engaged in their activity, a few others become so involved in their activity that they suffer from multiple negative outcomes. The present approach proposes that obsessive passion represents one of the psychological underpinnings of problematic gaming, while harmonious passion represents an advantageous type of engagement conducive to more favorable outcomes. Finally, it seems clear that video game playing may produce both negative and positive outcomes depending on the prevailing level of harmonious and obsessive passion.

Disclosure Statement

The authors have no conflict of interest.

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References

1. Yi M. They got game: Stacks of new releases for hungry video enthusiasts mean its boom time for an industry now even bigger than Hollywood. *San Francisco Chronicle* 2004 (December 18): A1.
2. Durkin K, Barber B. Not so doomed: computer game play and positive adolescent development. *Journal of Applied Developmental Psychology* 2002; 23:373-92.
3. Ryan RM, Rigby CS, Przybylski A. The motivational pull of video games: a self-determination theory approach. *Motivation & Emotion* 2006; 30:347-63.
4. Kraut P, Patterson M, Lundmark V, et al. Inter paradox: a social technology that reduces social involvement and

- psychological well-being. *American Psychologist* 1998; 53:1017–31.
5. Young KS, Rogers RC. The relationship between depression and Internet addiction. *CyberPsychology & Behavior* 1998; 1:25–8.
 6. Vallerand RJ, Blanchard C, Mageau GA, et al. Les passions de l'âme: on obsessive and harmonious passion. *Journal of Personality & Social Psychology* 2003; 85:756–67.
 7. Deci EL, Eghrari H, Patrick BC, et al. Facilitating internalization: the self-determination perspective. *Journal of Personality* 1994; 62:119–42.
 8. Hodgins HS, Knee R. (2002) The integrating self and conscious experience. In Deci EL, Ryan RM, eds. *Handbook of self-determination research*. Rochester, NY: University of Rochester Press, pp. 87–100.
 9. Aron A, Aron EN, Smollan D. Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality & Social Psychology* 1992; 63:596–612.
 10. Rousseau FL, Vallerand RJ. An examination of the relation between passion and subjective well-being in older adults. *International Journal of Aging & Human Development* 2008; 66:195–211.
 11. Vallerand RJ, Rousseau FL, Grouzet FME, et al. Passion in sport: a look at determinants and affective experiences. *Journal of Sport & Exercise Psychology* 2006; 28:454–78.
 12. Rip B, Fortin S, Vallerand RJ. The relationships between passion and injury in dance students. *Journal of Dance Medicine & Science* 2006; 10:14–20.
 13. Séguin-Lévesque C, Laliberté ML, Pelletier LG, et al. Harmonious and obsessive passion for the Internet: their associations with the couple's relationships. *Journal of Applied Social Psychology* 2003; 33:197–221.
 14. Wang CC, Chiu YS. Harmonious passion and obsessive passion in playing online games. *Social Behavior & Personality* 2007; 35:997–1006.
 15. Wang CKJ, Khoo A, Liu WC, et al. Passion and intrinsic motivation in digital gaming. *CyberPsychology & Behavior* 2008; 11:39–45.
 16. Mageau GA, Vallerand RJ. The moderating effect of passion on the relation between activity engagement and positive affect. *Motivation & Emotion* 2007; 31:373–92.
 17. Barrett LF, Russell JA. Independence and bipolarity in the structure of current affect. *Journal of Personality & Social Psychology* 1998; 74:967–84.
 18. Tejeiro RA, Morán RM. Measuring problem video game playing in adolescents. *Addiction* 2002; 97:1601–06.
 19. Diener E, Emmons RA, Larsen RJ, et al. The satisfaction with life scale. *Journal of Personality Assessment* 1985; 49:71–6.
 20. Miquelon P, Vallerand RJ. Goal motives, well-being, and physical health: Happiness and self-realization as psychological resources under challenge. *Motivation & Emotion* 2006; 30:259–72.
 21. Knäuper B, Rabiau M, Cohen O, et al. Compensatory health beliefs: Theory and measurement. *Psychology & Health* 2004; 19:607–24.
 22. Tabachnick BG, Fidell LS. (2007) *Using multivariate statistics*, 5th ed. Boston: Allyn & Bacon.
 23. Ryan RM, Deci EL. On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology* 2001; 52:141–66.

Address reprint requests to:

Dr. Robert J. Vallerand
 Laboratoire de Recherche sur le Comportement Social
 Université du Québec à Montréal
 Box 8888, Succursale Centre-ville
 Montréal (Québec) Canada, H3C 3P8

E-mail: vallerand.robert_j@uqam.ca

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AU1: Please insert highest academic degree for authors 1, 3, & 4.

AU2: Is controlled the correct word?

AU3: “is very encouraging” is vague: it’s unclear what exactly the research encourages. Perhaps the sentence should be restated to say that research to date provides a valid foundation for further work in understanding the role of passion....

AU4: Please verify disclosure statement is correct. If not, please revise.