

Videogamers of *League of Legends*: The role of passion in abusive use and in performance

Videojugadores del League of Legends: El papel de la pasión en el uso abusivo y en el rendimiento

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Abstract

There is growing concern about the addictive potential of Massively Multiplayer Online Role Playing Games (MMORPG). The Multiplayer Online Battle Arena (MOBA) is a new genre, poorly studied but very popular, in which performance holds priority over immersion. The aim of the current study was to explore the influence of passion both on abuse and performance, using the dualistic model of passion. A total of 369 participants completed an online questionnaire that included problematic use and the Passion Scale. From players' nicknames, performance statistics were obtained. The results show that harmonious passion is a protector from negative consequences. On the other hand, obsessive passion predicts negative consequences and use of videogames for evasion. Obsessive passion also predicts better performance. These results suggest that distinguishing the two kinds of passion is important because they influence vulnerability to developing maladaptive behaviors and also players' performance.

Keywords: Passion, Multiplayer Online Battle Arena, League of Legends, Internet Gaming Disorder, Performance

Resumen

Los juegos Massively Multiplayer Online Role Playing Games (MMORPG) han suscitado preocupación por su potencial adictivo. Los *Multiplayer Online Battle Arena* (MOBA) son un nuevo género poco estudiado, pero que goza de gran popularidad, en el que prima el rendimiento por encima de la inmersión. El objetivo del presente estudio era explorar qué influencia tenía la pasión tanto en el rendimiento como en el uso abusivo a partir del Modelo Dual de la Pasión. Un total de 369 participantes completaron un cuestionario en línea que incluía usos abusivos y la Escala de la Pasión. A partir del alias del jugador se obtuvieron estadísticas de rendimiento. Los resultados muestran que la pasión armónica es un protector de sufrir consecuencias negativas de jugar. Por otro lado, la pasión obsesiva predice consecuencias negativas y el uso para la evasión. La pasión obsesiva también predice mejores resultados de rendimiento. Estos resultados sugieren que el tipo de pasión de los videojugadores es importante, ya que influye en la vulnerabilidad de sufrir conductas desadaptativas y en el rendimiento del jugador.

Palabras clave: Pasión, Multiplayer Online Battle Arena, League of Legends, Internet Gaming Disorder, Rendimiento.

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In recent decades, there has been a revolutionary phenomenon with regard to leisure due to the incursion of new technologies, setting up a new digital entertainment. Computers, consoles, and mobile devices are platforms on which any user can enjoy this type of entertainment. Among the various options are videogames, a kind of voluntary activity in which one interacts with software for fun or to achieve some reward (Carbonell, Talarn, Berany, Oberst, & Graner, 2009). The access of videogames to the Internet opens a field towards social, cooperative, and competitive games because they allow users to interact with each other through the game. This type of videogames are called massive (Massively Multiplayer Online, hereafter MMO), and the most popular titles can have thousands of players connected simultaneously on one server.

The most popular MMO genre is currently the Multiplayer Online Battle Arena (MOBA), and the League of Legends (LoL) was the computer game most frequently played in North America and Europe in 2012 (Gaudiosi, 2012) and the most played worldwide in May 2014, according to the specialized website Raptr.com (Scheld, 2014). In MOBA, the most skilled players compete with each other continuously to prove their worth as the best in their game. So much so, that this type of competitions has been regulated and, thanks to their great popularity among other users, there are generous prizes. It is noteworthy that the final LoL of the year 2013 was followed by more than 32 million spectators and more than two million dollars were distributed in prize money, with the presence of companies sponsoring the players for their own promotion.

The vast majority of studies on MMO focused on online role-playing games (the so-called Massively Multiplayer Online Role Playing Games- MMORPG), but there is very little literature on the MOBA (e.g., Kahn et al., 2015; Pobiedina, Neidhardt, Calatrava, & Werthner, 2013). Although they are two similar MMO genres, they have notable differences. In the MMORPG, the players control an avatar who personifies them and who obtains a reward of gold and experience from the confrontations. These resources allow the players to improve skills and the team to be more competent. In the MOBA, players also improve their features similarly, but the evolution of the character is much faster, as one starts from the first level in each game (unlike the MMORPG, in which the same level and objects are maintained for the next game session). Gold investment is an important tactical feature that influences the strategy that will be used during the game (Nuangjumnong & Mitomo, 2012). In relation to the gaming experience, the MMORPG are open worlds where thousands of users meet to perform "missions" and explore the large map, so that immersion in the game is primordial (Fuster, Chamarro, Carbonell, & Vallerand, 2014). The MOBA game experience is completely different, as the stage of the game is highly focused towards team play, and it is difficult for a single player to lead his team to victory. The

main objective of the team is to destroy the "base" of the opposing team. Through specialized websites like OPGG.com or Lolking.com, the category of the player can be found (in LoL, there are 25 ranges) or the objective performance statistics such as Gold per Minute - GPM or KDA (the times that the player has been involved in the elimination of an opponent divided by the times that the player has been eliminated), which is the index used in the competitions. The immediacy of the availability of these data allows comparing the players' skills with great precision (Pobiedina, 2013).

Despite its increasing popularity, given the potential loss of identity and of control experienced in the MMO, concerns about its possible addictive capacity have been raised (Carbonell, Talarn, Beranuy, Oberst, & Graner, 2009; King, Delfabbro, & Griffiths, 2013; Kiraly, Griffiths, & Demetrovics, 2015). In the fifth edition of the *Statistical Manual of Diagnostic and Mental Disorders* (DSM-V) in Section III, reserved for conditions that require further study, MMO addiction is included under the name of *Internet Gaming Disorder* (American Psychiatric Association, 2013; Ko, 2014). This type of behavioral addiction has been considered to be the first in the field of new technologies and equated, unprecedently, to substance consumption (Carbonell, 2014).

In order to detect people with problems of abuse in MMO, Chamarro et al. (2014) have created the "Cuestionario de Experiencias Relacionadas con los Videjuegos" (CERV; Videogames-related Experiences Questionnaire) which assesses two factors: Psychological dependence and use for evasion, and Negative consequences of the use of videogames. The use of videogames to avoid tasks and life problems can create some psychological dependence, given its powerful inhibitory effect on negative feelings (Tejeiro & Morán, 2002). The negative consequences of videogames have been widely studied and include core elements of the Internet Gaming Disorder (Ko, 2014), such as academic performance and work responsibility, and social relations both in the family and in groups of friends (Griffiths & Davies, 2005).

An adequate approach to study the implications of the use of videogames is the dual model of passion of Vallerand et al. (2003). Vallerand defines passion as a strong tendency to perform an activity that pleases the individual, seems important to him or her, and in which he or she invests time and energy. It also has a strong implication in identity, making exciting activities become a part of who we are. The way an activity is internalized in a person's identity is important, such that two types of passion are distinguished: harmonic passion (HP) and obsessive passion (OP). HP is the result of autonomous internalization of the activity in the person's identity. In this type of passion, the activity occupies an important place in the person's identity without being overwhelming and it can be shared harmoniously with other aspects of life. People with HP can quit the activity if they decide that it has become a negative factor in their

lives. OP emerges from a controlled internationalization of the activity in the person's identity. This control is the result of an intrapersonal and/or interpersonal pressure towards performing the activity. As commitment to the activity is beyond the person's control, the exciting activity ends up occupying a disproportionate place in the person's identity and comes into conflict with other life activities. A consequence of this process is persistence, which becomes rigid and is present even if the activity does not provide positive feelings and entails personal costs such as the deterioration of relationships or the failure of work obligations (see Vallerand, 2012, for a review).

Although no studies on passion in MOBA players have been published, there is some literature about passion in MMORPG players. Thus, for example, HP has been associated with users' positive gaming experiences and focusing on social interaction. These users belonged to groups that were more focused on cooperating for the common good and promoting the autonomy of their components (Fuster et al., 2014). Conversely, OP has been associated with problem behaviors associated with playing excessively, such as excessive time spent playing or sleep disorders (Lafrenie, Vallerand, Donahue, & Lavigne, 2009). Another study (Wang, Khoo, Liu, & Divaharan, 2008) has linked OP with addictive tendencies and membership in groups of players that are very hierarchical and that have authoritarian leaders. Also in this line are the results of Fuster et al. (2014), showing, on the one hand, the relationship of HP with exploration and socialization and, on the other, the relationship of OP with dissociation and motivation toward achievement, because, for this type of fans, challenge predominates over exploratory experience and socialization.

In other activities such as sports, HP has been related to goals involving the mastery of skills, and OP with outcome-oriented goals (Vallerand et al., 2008). Studies of Vallerand and his collaborators suggest that passion is the force needed to reach the level of expertise in an activity, which depends on persistence in its practice. In this sense, HP should be an enhancer of long-term performance, as it offers some protection against quitting (Curran, Appleton, Hill, & Hall, 2011). In parallel, OP contributes to focusing on the development of the activity towards victory due to the pressure of protecting one's identity as a competent player (Donahue, Rip, & Vallerand, 2009).

Ultimately, the studies suggest that passion plays an essential role both in the use of videogames and performance in competitive activities. It seems that HP is related to adaptive game use, whereas OP is related to maladaptive use (Fuster et al., 2014; Lafrenie et al., 2009; Wang et al., 2008). Both types of passion seem to be related to performance (Curran et al., 2011; Donahue et al., 2009; Vallerand et al., 2008).

In accordance with the above, the overall goal of this study is to explore the possible influence of passion for playing

MOBA on its use and on performance in the game itself. Taking into account the above arguments, the specific goals are to explore and analyze: (a) the possible relationship between the two types of passion and abusive, maladaptive uses of LoL; (b) the type of relationship between the two types of passion and performance in LoL. On the basis of these goals and the studies on the subject, three hypotheses were established: (H1) we expect that HP will have a negative correlation both with evasion and negative consequences; (H2) we expect that OP will correlate positively with evasion and negative consequences; (H3) we expect that the two types of passion will be related to better performance.

Method

Participants

Participants were 369 Spanish-speaking LoL players who agreed to complete an online questionnaire (see Table 1). The conditions for participation were being over 16 years of age and playing LoL periodically. Participants' mean age is 21.59 years ($SD = 3.58$). The average playing time per week is 17.72 hours ($SD = 12.46$).

Instruments

The instrument was a single questionnaire containing some questions and other questionnaires. Sociodemographic data such as age, sex, educational level and occupation, the alias used in the game, and the hours devoted to playing were also collected. Participants were also asked to complete the questionnaires of the Passion Scale and the CERV.

Using the player's alias (the nickname that the player uses in the game), we had access to the data of the games in which the players had participated, through the specialized website *OP.GG*. The data collected were the murders (Kills), the assisting of murders (Assists), and the deaths (Deaths) in non-ranking games to calculate the mean KDA: (Kills+Assists)/Deaths. The player's classification category was also recorded.

Passion was assessed with the Spanish version of the Passion Scale (Vallerand et al., 2003), which consists of two subscales of six items each, evaluating HP and OP, as well as five criterion items to assess the degree of passion for the activity. Each item is scored on a 7-point Likert scale ranging from *completely disagree* to *completely agree*. For example, an HP item is "This activity is in harmony with other things that are part of me", and an example of an OP item is "I have difficulty controlling the urge to practice this activity". In the criterion items, the participants were asked to indicate the degree to which they valued the activity, devoted time and energy to it, and considered it a passion. If the score on these items is higher than four points, the subjects consider themselves to be passionate. For the types of passion, the Cronbach alpha coefficients were .75 for HP and .83 for OP.

To assess abuse, we used the CERV (Chamarro et al., 2014), a version for videogames of the “Cuestionario de Experiencias Relacionadas con Internet” (CERI; Internet-related Experiences Questionnaire; Beranuy, Chamarro, Graner, & Carbonell, 2009). The CERV has 17 items assessing two factors: Psychological dependency and evasion and Negative consequences, with 8 and 9 items, respectively. It is rated on a 4-point Likert-type scale, depending on the individual’s approximate frequency. The Cronbach alphas for the subscales in our study were $\alpha = .67$ for Evasion and $\alpha = .81$ for Negative consequences (see Table 2).

Procedure

Data was collected between March and May 2014. Access to the questionnaire was free via an online link. The researchers of the study published messages in several specialized game forums, calling for the cooperation of players in the study. In the first part of the questionnaire, there was a section in which the goals of the study were explained, as well as the voluntary, confidential, and anonymous nature of the answers. This section requested the informed consent, which had to be accepted if the players wished to complete the questionnaire. It also indicated that they could quit at any time and refuse to continue taking part in the research. At the end of the questionnaire, we requested the participants to recommend the questionnaire to other players, if they deemed it appropriate.

When the results of questionnaires were collected, 457 responses were obtained. Of them, 88 cases presenting incomplete data and extreme cases of hours of game play (more than 50 hours during the week and more than 30 hours on weekends) were discarded.

Data Analysis

Data analysis was performed with the SPSS statistical program, version 17.0 in Spanish. The techniques used were: (a) descriptive analysis, (b) correlational analysis, and (c) step-wise multiple linear regression analysis, in which the sociodemographic variables were introduced in the first step and the two passions in the second step. Abusive use and performance measures were considered the dependent variables (Evasion, Negative consequences, KDA, and Category).

Results

Descriptive characteristics of the sample

We obtained 369 valid responses. The average age of the participants was 21.59 years ($SD = 3.22$), ranging from 16 to 33 years. Table 1 shows that participants were mostly male (88.3%), had higher education (80.2%), and were students at the time of answering the questionnaire (64.8%). The descriptive statistics of the psychological and performance variables are shown in Table 2.

Table 1. Descriptive Characteristics of the Sample

		n (%)
Sex	Male	326 (88.3%)
	Female	43 (11.7%)
Studies	Primary	4 (1.1%)
	Secondary	69 (18.7%)
	Higher studies	296 (80.2%)
Occupation	Unemployed	30 (8.1%)
	Student	239 (64.8%)
	Employed	39 (10.6%)
	Student and working	61 (16.5%)

Table 2. Descriptive Statistics

	n	M	SD	Min.	Max.	α
Passión Criterion	369	21.05	5.99	9.00	35.00	.79
HP	369	26.14	6.71	7.00	42.00	.75
OP	369	14.70	6.87	6.00	40.00	.83
Evasion	369	17.84	3.85	8.00	32.00	.67
Negative Consequences	369	16.25	4.95	9.00	36.00	.81
KDA	362	2.67	.99	1.10	11.75	
Classification Category	266	10	5.36	1.00	24.00	

Note. OP = obsessive passion; HP = harmonic passion.

Correlations

As shown in Table 3, the most notable aspect is that OP had moderately high, positive correlations with Negative consequences and Evasion. HP had positive but low, significant correlations with OP and Evasion. On the other hand, Evasion had a positive, significant, and moderately high correlation with Negative consequences. It also correlated positively, but to a lesser extent, with KDA and Category.

Regression analysis

The results of the step-wise multiple linear regression analysis are shown in Table 4. Age, OP, and HP explained 50.1% of the variance of the dependent variable Negative consequences. Being younger and scoring higher in OP were predictors of negative consequences of LoL use. Higher HP levels predicted lower levels of negative consequences. When considering Evasion as the dependent variable, OP explained 43.8% of the variance of LoL use as the main evasive activity.

In terms of performance, considering KDA as the dependent variable, being female and having high levels of OP predicted 2.6% of the variance. For classification Category as the dependent variable, only OP predicted 1.5% of the variance.

Table 3. Correlations between Psychological Variables and Performance

	Passion		Evasion	Negative consequences	KDA	Classification category
	Harmonic	Obsesive				
HP	1	.14**	.12*	-.05	.01	.07
OP		1	.66**	.68**	.11*	.12*
Evasion			1	.78**	.15**	.16*
Negative consequences				1	.03	.10
KDA					1	.08
Classification category						1

Note. OP = obsessive passion; HP = harmonic passion.
**p < .05. *p < .01.

Table 4. Result of the Hierarchical Multiple Regression Analysis

Dependent variable	R ²	Predictor variables	β	t-value	p-value
Evasion	.438	OP	.66	16.91	.001
Negative consequences	.016	Age	-.01	-2.68	.008
	.460	OP	.7	18.77	.001
	.025	HP	-.16	-4.24	.001
KDA	.011	Sex	.12	2.2	.028
	.015	OP	.12	2.32	.021
Category	.015	OP	.12	1.97	.049

Note. Only the significant correlations are shown. OP = obsessive passion; HP = harmonic passion.

Discussion

The present study was designed to explore the relationship between passion, abusive use, and performance in LoL players. It was hypothesized that OP would be positively related to abuse and performance, whereas HP would be negatively related to abuse, but positively related to performance. Our results partially confirm the hypotheses: players who have greater OP present higher levels of abuse and better performance, whereas players with higher HP present lower levels of negative consequences, but no effects were found in performance.

The sample of this study had higher passion criterion and OP scores than MMORPG players (Fuster et al., 2014), and similar scores in HP. Their higher degrees of OP might be due to the fact that competition and performance predominate in LoL, unlike MMORPG, where players are more focused on socialization or immersion (Nuangjumnonga & Mitomo, 2012). The models obtained from the regression analysis show that OP is related to the two dimensions of abuse and to the two performance indicators, whereas HP is negatively related to the negative consequences of LoL use. Altogether, these results suggest that the dimensions of passion seem to

play an important role in the definition of the consequences of LoL use. OP appears as a predictor of maladaptive playing, whereas HP seems to be a shield against the negative consequences of LoL use. This may be due to the fact that HP allows players to quit the activity if it produces some kind of deterioration in their daily lives, in social or work areas (Vallerand et al., 2003). The lack of relationship between HP and dependence and evasion coincides with the findings of Fuster et al. (2014), who found no relationship between HP and evasive and dissociative reasons for playing. The relationship between OP and abusive use and performance is also consistent with the findings of Fuster et al. (2014), who showed that OP predicted players' orientation towards performance and for videogames to be considered an evasive activity and an escape from reality. When playing LoL becomes an exciting activity for reasons that are not internalized autonomously, the person loses control over it. The consequences of this loss of control are assessed by the subscales of abusive use. Hence, the results are consistent with the study of Wang et al. (2008), who relates OP to maladaptive addictive tendencies.

With regard to abuse, the sample presents high levels of LoL use for evasion as well as of negative consequences, in comparison with the study of Chamarro et al. (2014). This may be because the present study has focused specifically on players who played more than 25 hours per week, whereas the sample of Chamarro et al. was general population of high school students. On the other hand, we observed that evasion shows a moderately high positive correlation with negative consequences, and significant but low correlations with KDA and category. In the first case, this is expected, because negative consequences are two dimensions of the same construct (abuse), whereas in the second case, performance seems to be associated with LoL use as an evasive activity, so players have more capacity for concentration and, therefore, better performance when playing. The results suggest that HP is a protector against the negative consequences and it has no relationship with evasion.

The fact that the performance variables selected are based on outcomes and not on the perfection of skills could explain

why HP has no influence on these variables (Vallerand et al., 2008). Data from this study are in this line as well because OP is related, albeit weakly, to the two performance variables. In the study of Vallerand et al. (2008), this type of passion is related to outcome goals. The classification category serves to achieve social recognition within the game and should be the primary goal in players with OP because, according to Donahue et al. (2009), social desirability is one of the causes of non-autonomous interiorization in one's identity due to the need to demonstrate competence.

This study is limited with regard to the positive consequences of playing. The fact that the main goal of videogames is to carry out an activity for fun leads to overlooking a strong motivational component (Carbonell et al., 2009). Well-being or socialization are direct positive consequences of playing videogames and could be related to HP in LoL players (Fuster et al., 2014; Lafrenie et al., 2009). Therefore, in future research, it would be appropriate to clarify the relationship between this dimension of passion and different types of positive consequences of LoL. Another limitation of the study is the lack of other performance indicators, such as gold per minute (GPM), much used in the competitive panorama to analyze players' performance individually and which assesses mastery goals, as it does not depend on direct confrontation. The gold won during the game is spent on improvements for the avatar and gives an advantage in the match, such that the best players will be those who win more gold to increase their potential. It could therefore be expected that high levels of this index would be related to HP, because it depends on mastering the game skills (Vallerand et al., 2008). For future studies, it is recommended to have access to this variable, given its accuracy to assess performance and its possible relationship with HP. Regarding the sample of the study, as it was mostly young people with higher education, the generalizability of the results is limited. In future research, it would be useful to have a wider spectrum of participants.

In conclusion, it is observed that the player's type of passion greatly affects both the addictive potential of evasion and its negative consequences, such as neglecting job or academic commitments. It is possible that the social alarm about the *Internet Gaming Disorder* is disproportionate, but we should address the possible relationship between maladaptive uses and the obsessive passion for playing LoL, given the growing popularity of the MOBA. As other authors have proposed in studies of psychological skills training in competitive sports contexts (Birrer & Morgan, 2010), it would be interesting to develop HP in conditions of game practice. For this purpose, more emphasis should be placed on mastery of skills, such as achieving performance goals that do not involve confrontation with the opposing team, and at the same time, are rewarded with gold during the game. This would be important especially for new players, because they are in a vulnerable situation with regard to the

internalization of the activity in their identity, and if this is controlled by social pressure, they are more likely to develop OP (Vallerand et al., 2003). As performance is also affected by OP, the effect of rewarding maladaptive behaviors should be taken into account, because such behaviors would have positive consequences on the results. A high degree of abusive use can be detrimental to the player's life. By promoting behaviors that favorably influence HP, we could protect players from developing abusive practices related to the negative consequences of playing.

Conflict of interest

The authors report they have no conflict of interest.

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