

On the Role of Passion in Performance

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ABSTRACT The present paper reports two studies designed to test the Dualistic Model of Passion with regard to performance attainment in two fields of expertise. Results from both studies supported the Passion Model. Harmonious passion was shown to be a positive source of activity investment in that it directly predicted deliberate practice (Study 1) and positively predicted mastery goals which in turn positively predicted deliberate practice (Study 2). In turn, deliberate practice had a direct positive impact on performance attainment. Obsessive passion was shown to be a mixed source of activity investment. While it directly predicted deliberate practice (Study 1) and directly predicted mastery goals (which predicted deliberate practice), it also predicted performance-avoidance and performance-approach goals, with the former having a tendency to facilitate performance directly, and the latter to directly negatively impact on performance attainment (Study 2). Finally, harmonious passion was also positively related to subjective well-being (SWB) in both studies, while obsessive passion was either unrelated (Study 1) or negatively related to SWB (Study 2). The conceptual and applied implications of the differential influences of harmonious and obsessive passion in performance are discussed.

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“Take your passion and make it happen”

(From the song “Flashdance . . . What a Feeling” performed by Irene Cara, 1983)

Sir Laurence Olivier, Rudolf Nureyev, B. B. King, and Luciano Pavarotti. Some of the best performers of all time in their respective field of achievement. Lifetimes of high-level performance and dedication to their craft. In the face of such achievements, most people assume that the exploits of these performers are almost exclusively the result of remarkable natural talent. However, scientists conducting expert performance research (e.g., Charness, Tuffiash, Krampe, Reingold, & Vasyukova, 2005; Ericsson & Charness, 1994) suggest that individuals such as those mentioned above, have achieved high levels of performance because they have engaged for several years in highly structured practice aimed at improvement and skill refinement. Indeed, it is often forgotten that these individuals had to work hard at their craft, often for years before finally “making it”. But what psychological factors enabled these performers to maintain a sustained level of intense practice over a lifetime? Ericsson and Charness (1994) noted that the nature of the motivational forces that lead individuals to engage in such sustained deliberate practice is currently unclear.

We believe that the concept of passion represents the energy underlying such persistent involvement. Indeed, being passionate for an activity leads individuals to dedicate themselves fully to their activity, thereby allowing them to persist, even in the face of obstacles, and to eventually reach excellence. However, while passion may ensure dedication toward the activity and, eventually, performance, it may also be associated with positive or negative subjective well-being (SWB), depending on the type of passion involved. The purpose of the present research was to test the Dualistic Model of Passion (Vallerand et al., 2003) as applied to performance attainment in two studies.

THE DUALISTIC MODEL OF PASSION

Recently, Vallerand et al. (2003; Vallerand & Houliort, 2003) have offered a conceptual analysis of passion toward activities. This conceptualization of passion is based in part on Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000). SDT is a theory of

motivation and personality that focuses on the role of psychological needs in the growth and development of the person. Specifically, SDT posits that in order to grow psychologically, people need to satisfy their basic psychological needs of autonomy (a desire to feel a sense of personal initiative), competence (a desire to interact effectively with the environment), and relatedness (a desire to feel connected to significant others). In order to fulfill these needs, people interact with the environment and engage in various activities. These experiences with such activities will help people grow and develop a sense of self. This is because there is a basic human tendency toward higher-order organization. Such organization takes place through the organismic integration process which entails that the self becomes more complex over time through the interrelations of self constituents, as well as the internalization of elements from the environment. This internalization process can take one of two forms, an autonomous or a controlled process. An autonomous internalization occurs when individuals have freely accepted the activity as important for them without any contingencies attached to it. This type of internalization emanates from the intrinsic and integrative tendencies of the self (Deci & Ryan, 2000; Ryan & Deci, 2003) and produces a motivational force to engage in the activity willingly and engenders a sense of volition and personal endorsement about pursuing the activity. Individuals are not compelled to do the activity but rather, they freely choose to do so. On the other hand, a controlled internalization originates from intra and/or interpersonal pressure either because certain contingencies are attached to the activity, such as feelings of social acceptance or self-esteem or other contingencies derived from ego-invested self-structures (Hodgins & Knee, 2002). Past research in SDT has demonstrated that activities that are *not* interesting can be internalized in either a controlled or an autonomous fashion (see Deci & Ryan, 2000; Sheldon, 2002; Vallerand, 1997; Vallerand, Fortier, & Guay, 1997).

Vallerand et al. (2003) have proposed a Dualistic Model of Passion in which they define passion as a strong inclination toward an activity that individuals like (or even love), that they find important, in which they invest time and energy (Vallerand et al., 2003), and which comes to be internalized in one's identity. In line with SDT (Deci & Ryan, 2000), this model proposes that people engage in various activities in the hope of satisfying basic psychological needs of autonomy, competence, and relatedness. Certain enjoyable activ-

ities come to be so self-defining that they represent central features of one's identity. Such a passion becomes a central feature of one's identity and serves to define the person. For instance, those who have a passion for playing the guitar or for dancing do not merely play the guitar or dance; they are "guitar players" or "dancers." Passionate activities are part of their identity—of who they are. The Dualistic Model of Passion (Vallerand et al., 2003) thus extends SDT by proposing that enjoyable activities that people like and engage in on a regular basis will also be internalized to the extent that they are highly valued by the person (Aron, Aron, & Smolan, 1992; Csikszentmihalyi, Rathunde, & Whalen, 1993). Furthermore, when such an internalization of an enjoyable activity takes place within one's identity, it then leads to a passion toward that specific activity.

The Dualistic Model of Passion further posits that two distinct types of passion develop as a result of the type of internalization process that takes place (Deci & Ryan, 2000; Sheldon, 2002). Obsessive passion results from a controlled internalization of the activity into one's identity. Such an internalization originates from intra and/or interpersonal pressure either because certain contingencies are attached to the activity, such as feelings of social acceptance or self-esteem, or because the sense of excitement derived from activity engagement becomes uncontrollable. Individuals with an obsessive passion come to develop ego-invested self-structures (Hodgins & Knee, 2002) and, eventually, display a rigid persistence toward the activity thereby leading to less than optimal functioning within the confines of the passionate activity as well as when prevented from engaging in it. Thus, although individuals like the activity, they find themselves in the position of experiencing an uncontrollable urge to engage in it. They feel compelled to engage in the activity due to these internal contingencies that come to control them. They cannot help but engage in the passionate activity; the passion must run its course as it controls the person. Because activity engagement is out of the person's control, it eventually occupies disproportionate space in the person's identity and causes conflict with other activities in the person's life. Given that obsessive passion entails a controlled internalization, it should breed an internal compulsion to engage in the activity, leading to a more rigid and conflicted form of task engagement. Such pressured engagement should prevent the person from fully focusing on the task at hand, and may interfere with the experience of positive affect; it may even facilitate

negative affect during task engagement. In addition, because with obsessive passion an internal compulsion leads the person to engage in the activity even when he or she should not, he or she may experience negative emotions once engagement in the passionate activity is terminated (e.g., guilt for having engaged in the activity when he or she should not have done so). In a similar vein, this internal pressure to engage in the passionate activity makes it very difficult for the person to fully disengage from thoughts about the activity. Thus, the person will engage in rumination about the activity and experience negative feelings of psychological dependence when prevented from engaging in the activity. Finally, because of its controlled nature, obsessive passion is expected to lead to a rigid form of persistence. Such persistence is rigid because it not only occurs in the absence of positive emotions, but even in the face of important personal costs such as damaged relationships and failed work commitments.

Harmonious passion, by contrast, results from an autonomous internalization of the activity into the person's identity. An autonomous internalization occurs when individuals have freely accepted the activity as important for them without any contingencies attached to it. As seen earlier, this type of internalization produces a motivational force to engage in the activity willingly, and engenders a sense of volition and personal endorsement about pursuing the activity. Individuals are not compelled to do the enjoyable activity; rather, they freely choose to do so. With this type of passion, the activity occupies a significant, but not overpowering space in the person's identity and is in harmony with other aspects of the person's life. In other words, with harmonious passion the authentic integrating self is at play allowing the person to fully partake in the passionate activity, and other life activities as well, with an openness that is conducive to positive experiences (Hodgins & Knee, 2002). Harmonious passion is thus hypothesized to lead to greater positive affect and less negative affect than obsessive passion. This is because the autonomous internalization of the activity leads the person to engage in the task in a more flexible manner, and thus to experience task engagement more fully. Such a flexible form of activity engagement should facilitate better concentration and the experience of positive affect, absorption, and flow (i.e., the feeling that one is immersed in the activity; see Csikszentmihalyi, 1978; Jackson & Marsh, 1996) while engaging in the activity. Furthermore, because harmo-

nious passion facilitates control of the activity, it should contribute to the experience of positive affect and minimize the experience of negative affect after task engagement. It may even facilitate positive affect when the person is prevented from engaging in the passionate activity and does something else. Finally, such control over the activity should lead the person to display flexible persistence, persisting in the passionate activity only if positive returns are expected. If conditions become negative, behavioral involvement should stop.

At this stage, perhaps a word on the comparison between intrinsic and extrinsic motivation and passion is in order. Intrinsic motivation entails engaging in an activity out of pleasure and enjoyment (Deci, 1975). Thus, it shares this aspect of liking the activity with the concept of passion. However, intrinsically motivated activities are typically not seen as being internalized in the person's identity (Deci & Ryan, 1985) and are best seen as naturally emerging from the person-task interaction at the short-term level (Koestner & Losier, 2002). On the other hand, extrinsic motivation entails engaging in the activity not out of pleasure, but in order to obtain something outside the activity. Thus, a fundamental difference between extrinsic motivation and passion is the lack of liking for the activity. Research by Vallerand et al. (2003, Study 2) has shown that passion leads to affective outcomes in line with the Passion Model while controlling for intrinsic and extrinsic motivation. It would thus appear that intrinsic and extrinsic motivation and passion represent distinct constructs. Finally, it should be underscored that because both forms of passion entail a love for the same activity, they are thus expected to be moderately and positively correlated. The different types of internalization processes involved with each type of passion, however, would lead to some divergent experiences and effects, with harmonious and obsessive passion predominantly leading to positive and negative effects, respectively.

Research has provided support for the Dualistic Model of Passion. For instance, Vallerand et al. (2003, Study 1) reported the results of exploratory and confirmatory factor analyses which supported the validity and reliability of the two-factor Passion Scale. In addition, both types of passion correlated equally and positively with measures of activity valuation and of perceptions of the task as being a passionate activity. Also, both types of passion correlated positively with a measure of activity inclusion in the self (e.g., Aron et al., 1992). However, as expected, only obsessive passion was found

to be associated with a measure of conflict with other life activities. Vallerand et al. (2003, Study 1) also found a positive relation between harmonious passion and measures of flow and positive affect experienced during task engagement, while obsessive passion was positively related to negative affect (e.g., shame) and cognition (e.g., rumination) after engagement with the activity and when prevented from engaging in the activity altogether. Additional research has also shown that harmonious passion is associated with increases in general positive affect, while obsessive passion is associated with general negative affect that take place over time (Vallerand et al., 2003, Study 2). Obsessive passion also predicts highly persistent behavior in activities that may be ill advised for the person such as winter cycling over icy roads in Quebec (Vallerand et al., 2003, Study 3) and pathological gambling (Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Vallerand et al., 2003, Study 4). Such is not the case for harmonious passion.

Finally, it should also be noted that support for the above findings has been obtained in various activities such as work (see Vallerand & Houliort, 2003), gambling (Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Ratelle et al., 2004; Rousseau, Vallerand, Ratelle, Mageau, & Provencher, 2002), sports (Vallerand et al., in press), internet use (Séguin-Lévesque, Laliberté, Pelletier, Blanchard, & Vallerand, 2003), and several types of recreational activities such as reading and playing music (Vallerand et al., 2003, Study 1). While emerging research provides strong support for several elements of the Dualistic Model of Passion, the research conducted on passion thus far has focused on cognitive and affective outcomes, but not on performance attainment. We now turn to this issue.

PASSION AND PERFORMANCE: THE PRESENT RESEARCH

Research on expert performance (Ericsson & Charness, 1994) reveals that people who attain exceptional levels of performance must undergo a long, active learning process, during which they improve and refine their abilities and skills. Ericsson, Krampe, and Tesh-Römer (1993) propose that deliberate practice, defined as a highly structured activity motivated by the explicit aim of improving performance, plays an important role in performance. Deliberate practice provides optimal opportunities for learning and skill acquisition because it affords immediate feedback and knowledge of results

relevant to performance. Coaches and professional teachers usually design these activities in the interest of improving specific aspects of performance through repetition and refinement. After a period of instruction, individuals can autonomously use these strategies. Ericsson et al. (1993) have shown that performance is a monotonic (linear) function of deliberate practice. For instance, they reported that by age 20, the top-level violinists in their study had practiced 2,500 hours more than the second-most accomplished group of expert violinists, and 5,000 hours more than the lowest level of experts. Much research supports the link between deliberate practice and performance in areas as diverse as science (Holmes, 1996), art (Winner, 1996), games (Charness, Krampe, & Mayr, 1996), and sports (Starkes, Deakin, Allard, Hodges, & Hayes, 1996).

Deliberate practice differs from leisure activities in that it can be demanding, repetitive, and not always inherently enjoyable. In spite of the fact that certain activities can have inherent appealing qualities (e.g., kinesthetic, visual), continued repetition could lead to habituation and fatigue. Deliberate practice also differs from professional work in that external or monetary rewards are rarely present. For instance, Nureyev would not have been paid more to privately dance for hours in order to perfect his effortless dancing. This has led Ericsson and Charness (1994) to raise the question of the nature of the motivational energy underlying deliberate practice.

We propose that passion represents a major motivational force underlying deliberate practice. Indeed, we posit that passion is an important source of fuel that allows people to go through long and at times frustrating practice sessions, and that eventually helps them attain high levels of performance. Indeed, both types of passion have been associated with prolonged involvement in activities (Vallerand et al., 2003, Study 1) that would appear to facilitate the development of competence and the attainment of excellence. However, passion is not hypothesized to influence performance directly. Rather, passion sets things in motion by providing people with the energy and goals to engage in deliberate practice, and it is this deliberate practice that is hypothesized to have a direct influence on performance. Study 1 tested the role of both types of passion in facilitating engagement in deliberate practice, which, in turn, should predict performance.

In Study 2 we sought to examine whether achievement goals represent the psychological processes through which passion contributes to deliberate practice and thus, indirectly, to performance.

Achievement goals represent the competence-based aims that an individual seeks to accomplish in an achievement setting (Elliot, 1997). Passion reflects a strong investment in an activity, which implies that the individual is committed to engaging in that activity in a competent manner. Past research has underscored the importance of three types of achievement goals (Elliot, 1997; Elliot & Harackiewicz, 1996): mastery goals (which focus on the development of personal competence and task mastery), performance-approach goals (which focus on the attainment of competence relative to others), and performance-avoidance goals (which focus on avoiding incompetence relative to others).¹ In line with the Dualistic Model of Passion, the achievement goal process is expected to differ as a function of the type of passion underlying activity engagement. Specifically, because it reflects an autonomous form of activity engagement, harmonious passion should trigger the adaptive goals of mastering achievement-related activities (Duda, 2001; Dweck, 1986). Harmonious passion is not expected to be linked to performance goals of either type. Thus, a clear and task-focused achievement goal process is posited to be induced by harmonious passion. Conversely, being a more pressured, internally controlled form of activity engagement, obsessive passion should trigger a conflicted regulatory process, whereby the individual feels compelled to pursue any and all forms of approaching success and to avoid failure at the activity, including mastering the task, trying to beat others, and trying to avoid doing poorly relative to others. As such, we predicted that obsessive passion would be positively related to mastery, performance-approach, and performance-avoidance goals. These hypotheses are in line with past research showing that harmonious passion is positively related to concentration, flow, and positive affect during task engagement, while obsessive passion is either unrelated to or negatively related to these variables (Mageau et al., 2005; Vallerand et al., 2003, Study 1).

Deliberate practice seems an excellent match to mastery goals, as this construct has been described in terms of striving effortfully to improve task performance (see Ericsson et al., 1993). Consequently,

1. A fourth achievement goal, mastery avoidance, was proposed and documented after the present research was conducted. This type of goal is less applicable to the issues addressed herein than are the other three types of goals (see Elliot & McGregor, 2001). As such, mastery-avoidance goals will not be attended to in the present discourse.

mastery goals were expected to predict engagement in deliberate practice. For performance-approach and performance-avoidance goals, the prevalent foci are to beat others and to avoid doing poorly relative to others, respectively. While such types of goals do not preclude task mastery as a way to outperform or avoid losing to others, improvement per se does not represent the main focus of performance-approach and performance-avoidance goals. Thus, it was expected that these two types of goals would not predict deliberate practice. On the other hand, research on achievement goals in educational settings (e.g., Elliot, McGregor, & Gable, 1999) reveals that performance-approach goals often positively and directly predict performance, whereas performance-avoidance goals commonly have a negative direct influence on performance. These findings were expected to generalize to Study 2 conducted in the sport domain.

An important postulate of the Dualistic Model of Passion is that heavy activity involvement may be associated with positive or negative well-being depending on the type of passion underlying such involvement. For instance, research conducted on passion thus far reveals that harmonious passion typically leads to positive affective experiences while obsessive passion leads to the absence of positive affect or even to negative affect (Mageau et al., 2005; Vallerand et al., 2003, Studies 1 and 2). These divergent relationships between harmonious and obsessive passion and affect have been obtained not only with respect to affect experiences within the context of the passionate activity, but also with respect to one's life in general (e.g., Vallerand et al., 2003, Study 2). Thus, although both types of passion may contribute to performance through their impact on deliberate practice, the process may be experienced quite differently depending on whether harmonious or obsessive passion is at play. While harmonious passion may be associated with positive subjective well-being (SWB), obsessive passion may not because it leads to on-task negative experiences as well as conflict with other life activities (see Vallerand et al., 2003, Study 1). Thus, while obsessive passion may contribute to performance, such improvement may come at a price—one's SWB (see Vallerand et al., 2003, Study 2). The divergent pattern of relationships between passion and SWB was assessed in the present research. The basic model guiding the present research reflects this perspective: Both harmonious and obsessive passion are hypothesized to lead to deliberate practice which, in turn, leads to performance. Harmonious passion is hypothesized

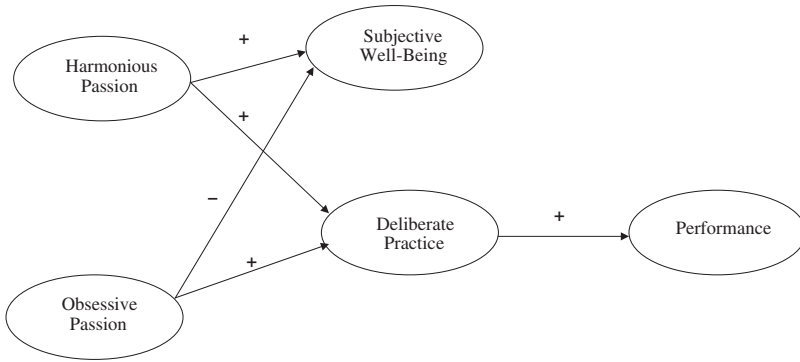


Figure 1
 The passion and performance attainment basic model.

to contribute positively to SWB, while obsessive passion is predicted to be either unrelated or negatively related to SWB. Figure 1 illustrates the proposed model that was tested in Study 1.

STUDY 1

The purpose of Study 1 was to test the model displayed in Figure 1 in a demanding performance field, namely the dramatic arts. The students who participated in this study would have had to pass through a highly selective process before being allowed to enroll in a specialized school for the dramatic arts. Students such as those who participated in this study will eventually become actors and comedians who appear on television and in films and theaters in Quebec and Canada. A prospective design was used, allowing a test of the predictive power of deliberate practice with respect to performance over time. Participants completed a questionnaire assessing both types of passion, deliberate practice, and SWB. One month later, instructors were asked to rate their students’ performance. Importantly, in the present research, deliberate practice pertained to activities that performers engaged in independent of the supervision of their instructors or coaches. This allowed us to control for a potential methodological confound; specifically, that instructors or coaches might attribute a higher level of performance to individuals working hard under their immediate supervision. Using path analytic techniques, we tested the model that posits that both types of passion positively predict engagement in deliberate practice, which in turn

positively predicts performance. In addition, harmonious passion was expected to positively predict SWB, while obsessive passion was expected to be either negatively related or unrelated to SWB.

METHOD

Participants and Procedure

Participants were 143 (52 male, 91 female) dramatic arts students from various theater schools and colleges across the Province of Quebec. These students represented an elite group, as entry into this field of study is highly restricted. The mean age of the students was 23.8 years. All participants were volunteers. Participants engaged in the dramatic arts an average of 14.33 hours per week, in addition to their courses. They had been engaged in the dramatic arts for an average of 7.24 years.

Participants completed a questionnaire at Time 1 that contained assessments of harmonious and obsessive passion, deliberate practice, and life satisfaction. The participants were informed that the researchers were interested in knowing more about the attitudes of dramatic arts students toward their activity. One month later, at Time 2, instructors were mailed an assessment form for each of their students' performance, and were asked to return the assessment by mail in a pre-stamped envelope.

Measures

Passion. The Passion Scale (Vallerand et al., 2003) is composed of two 7-item subscales: harmonious passion (e.g., “[*Activity*] is in harmony with other activities in my life” and “For me it is a passion, that I still manage to control”) and obsessive passion (e.g., “I cannot imagine my life without [*activity*]” and “I have a tough time controlling my need to do this activity”). Participants indicated their responses on a 1 (*Do not agree at all*) to 7 (*Very strongly agree*) scale. Results using both exploratory and confirmatory factor analysis have supported the two-factor structure of the scale (Vallerand et al., 2003). Furthermore, the scale has systematically displayed high internal consistency (see Mageau et al., 2005; Ratelle et al., 2004; Séguin-Levesque et al., 2003; Vallerand et al., 2003, Studies 1 to 4). In the present study, internal consistency indices of .73 and .89 were obtained for the harmonious and obsessive passion subscales, respectively.

SWB. The Diener, Emmons, Larsen, and Griffin (1985) Satisfaction With Life Scale served as a measure of SWB. It is a five-item scale

assessing general feelings of satisfaction with one's life. The validated French-Canadian version of the scale was used in the present research (Blais, Vallerand, Pelletier, & Brière, 1989). Participants indicated their responses on a 1 (*Do not agree at all*) to 7 (*Very strongly agree*) scale (Alpha = .84).

Deliberate practice. In order to develop an assessment of deliberate practice, we asked instructors, students, and actors to make a list of five activities that artists may engage in during their free time when they are seeking to improve their performance. This procedure is in line with that proposed by Ericsson and Charness (1994). From the sampling of activities that were reported, we selected the three most frequent activities. The scale started with the stem "During my leisure time . . ." and was followed by the items describing deliberate practice (e.g., "... I repeat the roles that I find difficult"). Participants indicated their responses on a 1 (*Do not agree at all*) to 7 (*Very strongly agree*) scale (Alpha = .75).

Performance. We used a consensual validation approach (Amabile, 1982) to develop an indicator of performance attainment. First, we asked a group of instructors and program directors to report the criteria they currently use to assess dramatic arts performance. These criteria were then put in item form and presented to the instructors and program directors, who were asked to identify the most relevant items. There was substantial agreement with regard to six of the items, and these items (e.g., "Up to now, this student shows creativity and imagination") were then used to assess performance. The instructors in our study rated their students' performance relative to other students in the program using a 1 (*Very weak performance*) to 7 (*Very strong performance*) scale (Alpha = .95).

Demographic information. On the last section of the students' questionnaire, they reported their date of birth, gender, and other information that allowed us to match their questionnaire with their instructors' performance assessment.

RESULTS AND DISCUSSION

Preliminary Analyses

T-tests revealed no gender differences on any of the variables. Means, standard deviations, and correlations among the variables in the study are presented in Table 1.

Table 1
Means, Standard Deviations, and Correlations: Study 1

	Mean	SD	HP	OP	DP	P	SWB
Harmonious Passion (HP)	5.97	.71	—	.41***	.40***	.05 ns	.27***
Obsessive Passion (OP)	5.54	1.16		—	.34***	.10 ns	.08
Deliberate Practice (DP)	5.06	1.26			—	.23**	.19*
Performance (P)	4.44	1.12				—	-.02
Subjective Well-Being (SWB)	5.29	1.09					—

Note: $n = 143$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Passion and Performance: A Path Analytic Model

The proposed model posits that both harmonious passion and obsessive passion are positive predictors of deliberate practice, which in turn, has a positive impact on performance. Furthermore, harmonious (but not obsessive) passion is expected to be positively associated with SWB. The results of the path analysis (EQS; Bentler, 1995), indicated that the model had an acceptable fit to the data, $\chi^2(4, N = 143) = 2.69, p = .61$; CFI = 1.00, NNFI = 1.05, RMSEA = 0.000). The paths showed that harmonious ($\beta = .32, p < .05$) and obsessive passions ($\beta = .21, p < .05$) positively predicted deliberate practice, and deliberate practice, in turn, positively predicted performance as assessed by instructors ($\beta = .23, p < .05$). Finally, harmonious ($\beta = .29, p < .05$), but not obsessive, passion was positively related to SWB. Figure 2 summarizes the results.

The results of Study 1 are consistent with the proposed model (see Figure 1). As expected, both types of passion toward the dramatic arts predicted deliberate practice which, in turn, was found to predict performance. It is important to note that the performance variable was not a subjective perception offered by the performers but rather an independent assessment of performance provided by their instructors. Of additional importance are the results that showed that only harmonious passion was positively associated with SWB. These findings provide support for the Dualistic Model of Passion which posits that while the two types of passion are expected to lead to heavy involvement and attainment in activities pertaining to one's passion, such involvement may be more adaptive when triggered by harmonious, as opposed to obsessive, passion.

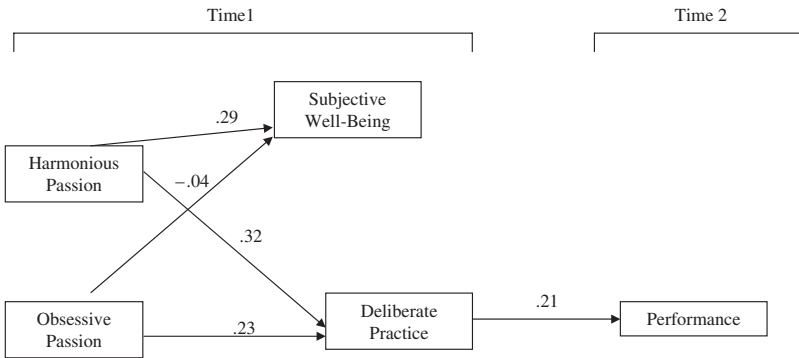


Figure 2

Results of the path analysis: Study 1. All coefficients were standardized to facilitate interpretability.

STUDY 2

The results of Study 1 provided support for the Dualistic Model of Passion as applied to performance, and a first purpose of Study 2 was to replicate the basic findings of Study 1. A second purpose of Study 2 was to examine the role of achievement goals in linking passion to deliberate practice and, ultimately, to performance. As indicated previously, because it reflects an autonomous form of activity engagement, harmonious passion was expected to trigger a coherent and focused achievement process characterized by the adaptive goal of mastering achievement-related activities. Conversely, because it reflects an internally controlled form of activity engagement, obsessive passion should induce a conflicted achievement process where the adaptive goal of mastering the activity may coexist with the maladaptive goal of trying to avoid failure, and the “valuable, yet vulnerable” goal (Elliot & Moller, 2003, p. 349) of trying to beat others. Thus, harmonious passion was expected to positively predict mastery goals while obsessive passion was hypothesized to predict all three types of goals. In turn, because they imply focusing on the task at hand in order to improve, mastery goals were expected to predict deliberate practice. On the other hand, performance-approach and performance-avoidance goals specifically deal with beating others and avoiding doing poorly relative to others, respectively. Thus, the focus is not on the task per se and these two types of goals were not expected to predict deliberate practice.

A third aim of Study 2 was to further probe the relationship between obsessive passion and SWB, this time with a more thorough assessment of SWB than that used in Study 1. The results of Study 1 revealed that harmonious passion was positively associated with SWB, as indexed by life satisfaction, while obsessive passion was unrelated to it. A more complete assessment of SWB may uncover a negative relationship, rather than a null relationship, between obsessive passion and SWB (e.g., Vallerand et al., 2003, Study 2). A fourth aim of Study 2 was to refine our measurement of deliberate practice by using separate measures of short-term and long-term deliberate practice. This short-term/long-term distinction was not attended to in Study 1 and incorporation of it in Study 2 could lead to a better understanding of the role of deliberate practice in performance. Indeed, activities other than those directly focused on the task at hand may contribute to performance. For instance, in an educational setting, career-related activities (e.g., being a member of a research lab, contributing to a help line) that focus on a long-term perspective may also contribute to classroom performance beyond those activities focused on mastering course content in the short term.

The fifth and final aim of Study 2 was to obtain a completely objective assessment of performance. The performance indicators in Study 1 were provided by instructors. While such assessments can be seen as being “objective” in the sense that the performance indicators did not come from the participants themselves, it is nevertheless possible that instructors’ ratings were influenced in some way by certain characteristics of the participants. Instructors’ performance assessments may, therefore, have contained some subjectivity. Thus, in Study 2, we used a purely objective measure of performance, namely, computer-graded performance in a psychology course.

Participants were second-year students at a university in the Province of Quebec who were enrolled in a specialized psychology program. Enrollment into the program is highly selective (about 15% of applicants are accepted), and matriculating students take more than 90% of their university courses in psychology. Most students in the program go on to a PhD program in psychology. As such, this is an elite and focused group of students who clearly display a passion for psychological study.

In Study 2, the basic model tested in Study 1 was tested again with regard to passion toward psychological study. In the proposed model, harmonious passion was expected to be a positive predictor of

mastery goals, whereas obsessive passion was expected to be a positive predictor of all three types of goals. Mastery goals were posited to lead to both short- and long-term deliberate practice which, in turn, were hypothesized to positively predict performance attainment. In line with past achievement goal research in educational settings (Elliot, McGregor, & Gable, 1999; Elliot & Moller, 2003), performance-approach goals were expected to positively predict performance, whereas performance-avoidance goals were expected to negatively predict performance. Finally, harmonious passion was expected to positively predict SWB, while obsessive passion was expected to negatively predict SWB or be unrelated to it.

METHOD

Participants and Procedure

The sample consisted of 130 undergraduate psychology students (19 men, 111 women; mean age of 23.84 years) enrolled in a specialized psychology program. Participants engaged in their passionate activity an average of 15.5 hours per week in addition to their courses. Participants revealed that they had experienced a strong interest in psychology for an average of 6.0 years.

Participants were contacted in their classroom during one of their psychology courses at the beginning of the fall semester. They were asked to complete a 20-minute questionnaire about their studies in psychology. Participants were also asked permission to use their final academic grades from the course as data for the present study. Participants were informed that their participation was voluntary and that confidentiality would be maintained.

Measures

Passion. The Passion Scale (Vallerand et al., 2003) was used to assess harmonious and obsessive passion toward studies in psychology (Alphas = .84 and .79 for harmonious and obsessive passion, respectively).

Achievement goals. A 12-item version of Elliot and Church's (1997) questionnaire was used to assess participants' mastery, performance-approach, and performance-avoidance goals toward their studies. A shortened version of this measure (and other measures in this study) was used due to time constraints in the data collection process; care was

taken to select items based on factor analytic data from an independent data set. All scales were reliable (alphas = .87, .88, and .73, respectively).

Deliberate practice. Two different measures of deliberate practice were developed for the purpose of the present study. First, a four-item scale (Alpha = .60) was adapted from Pintrinch, Smith, Garcia, and McKeachie (1993), which and sought to assess short-term deliberate practice operationalized as the extent to which participants used adequate strategies in order to get ready for exams (e.g., “When I study, I revise the material by going over it in my head many times.”). Second, a five-item measure (Alpha = .62) assessed long-term deliberate practice operationalized as to the extent to which students participate in additional psychology-related activities outside of the classroom in order to get ready for their future career in psychology (e.g., “I try to get involved in psychology-related activities [e.g., help lines, etc . . .]”). For each item, participants were asked to rate the extent to which they participated in the different activities using a scale ranging from 1 (*Do not agree at all*) to 7 (*Very strongly agree*).

SWB. SWB was assessed with a composite score of four well-being indicators. First, a four-item version of the Satisfaction With Life Scale used in Study 1 was used in Study 2 (Alpha = .85). Second, a five-item version of the Subjective Vitality Scale (Ryan & Frederick, 1997) was used to assess participant’s subjective perception of their vitality and aliveness (Alpha = .86). Participants were asked to rate the extent to which they experienced vitality using a scale ranging from 1 (*Do not agree at all*) to 7 (*Very strongly agree*). Third, the short version of the positive and negative affect scales (five items each) of the PANAS (Watson, Clark, & Tellegen, 1988) were used to assess positive and negative affect. Participants were asked to rate the extent to which they experienced each emotion using a scale ranging from 1 (*Very slightly or not at all*) to 5 (*Extremely*). Alphas of .75 and .83, were obtained for positive and negative affect, respectively. A composite SWB score was created by reverse coding the negative affect scale, transforming each scale into *z* scores, and summing all four scales (Alpha = .81).

Performance. Performance was obtained by summing students’ scores on their mid-term and final exams for their psychology course. Each exam contained 50 multiple-choice questions, was scored objectively, and contributed equally toward students’ final grade for the course. Total final scores in the course could vary from 0 to 100.

Demographic information. In the last section of the questionnaire, students reported their age, gender, and other information that allowed us to match their questionnaire with their exam results.

RESULTS

Preliminary Analyses

T-tests revealed no gender differences on any of the variables. Means, standard deviations, and correlations among the variables in the study are presented in Table 2.

Passion and Performance: A Path Analytic Model

As in Study 1, the proposed model was tested using path analysis (EQS; Bentler, 1995). In the model tested in Study 2, the disturbances among the three types of goals were allowed to correlate. A preliminary analysis revealed that harmonious passion had a direct link to long-term deliberate practice in addition to the indirect link through mastery goals; thus, this link was included in the final analysis. The results revealed that the model had an acceptable fit to the data $\chi^2(19, N = 130) = 22.32, p = .27$; CFI = .99; NNFI = .98; RMSEA = .04). The paths indicated that harmonious passion positively predicted mastery goals ($\beta = .46, p < .05$), and that obsessive passion positively predicted mastery goals (marginally: $\beta = .14, p \leq .10$), performance-approach goals ($\beta = .20, p < .05$), and performance-avoidance goals ($\beta = .25, p < .05$). Harmonious passion also had a direct link to long-term deliberate practice ($\beta = .28, p < .05$). Mastery goals, in turn, positively predicted both long-term ($\beta = .35, p < .05$) and short-term ($\beta = .37, p < .05$) deliberate practice. Both short-term ($\beta = .21, p < .05$) and long-term ($\beta = .28, p < .05$) deliberate practice as well as performance-approach goals ($\beta = .29, p < .05$) were direct positive predictors of performance. Performance-avoidance goals did not significantly influence performance, although the link was in the expected direction ($\beta = -.10, p > .10$). Finally, harmonious passion was positively related to SWB ($\beta = .46, p < .05$), whereas obsessive passion was negatively related to SWB ($\beta = -.19, p < .05$).²

2. Alternative models were run based on all possible permutations among the three groups of variables assessed at Time 1 (passion, goals, and deliberate practice) and performance at Time 2. All five alternative models yielded unacceptable fit indices except one. This model posited that achievement goals predicted passion, which predicted deliberate practice, which led to performance. However, the fit indices of this alternative model, while acceptable [$\chi^2(19, N = 130) = 29.42, p = .06$; CFI = .96; NNFI = .93; RMSEA = .07], were lower than those of the

Table 2
Means, Standard Deviations, and Correlations: Study 2

	Mean	SD	HP	OP	MG	PAppG	PAvoG	LDP	SDP	P	SWB
Harmonious passion (HP)	4.92	1.03	—	.36***	.48***	.03	-.02	.45***	.27**	.18*	.39***
Obsessive passion (OP)	2.55	1.00		—	.30***	.20*	.25**	.23**	.27**	.13	-.03
Mastery Goals (MG)	5.65	1.07			—	.25**	.28***	.48***	.37***	.28***	.21*
Performance-Approach Goals (PAppG)	3.17	1.61				—	.67***	.19*	.13	.30***	-.19*
Performance-Avoidance Goals (PAvoG)	3.41	1.39					—	.11	.13	.16	-.25**
Long-Term Deliberate Practice (LDP)	4.29	1.15						—	.30***	.38***	.22**
Short-Term Deliberate Practice (SDP)	5.27	.88							—	.32***	.14
Performance (P)	77.72	14.54								—	.02
Subjective Well-Being (SWB) (Standardized mean)	0.00	.74									—

Note: $n = 130$.
* $p < .05$. ** $p < .01$. *** $p < .001$.

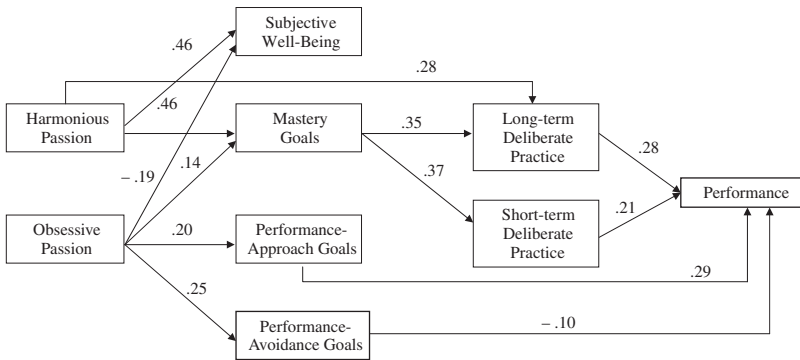


Figure 3
Results of the path analysis: Study 2.

Thus, the results of Study 2 are consistent with the proposed model and provide support for the Dualistic Model of Performance. The only finding that did not conform to predictions was that performance-avoidance goals did not negatively predict performance (although a trend in that direction was observed). Figure 3 provides a pictorial summary of the obtained results.

GENERAL DISCUSSION

The purpose of the present research was to test the Dualistic Model of Passion with respect to performance attainment in two studies. It was hypothesized that both types of passion would positively predict deliberate practice (Study 1), and that deliberate practice would in turn positively predict performance attainment. In addition, Study 2 explored the nature of the underlying achievement goals mediating the influence of passion on deliberate practice. Harmonious passion was hypothesized to positively predict mastery goals which, in turn, were expected to positively predict deliberate practice. Obsessive passion was hypothesized to positively predict all three achievement goals; performance-approach goals were expected to have a direct positive influence on performance, whereas performance-avoidance goals were expected to have a direct negative influence on performance. Harmonious passion was also hypothesized to be positively

proposed model. Overall, these findings provide additional support for the proposed theoretical model.

associated with SWB, whereas obsessive passion was expected to be negatively associated with SWB or to be unrelated to it. The results of the present research provided support for all but one of these specific hypotheses (the path between performance-avoidance goals and performance while in the expected direction was not significant).

The most general conclusion to be drawn from the present research is that it strongly supports the contention that the Dualistic Model of Passion (Vallerand et al., 2003) is applicable to performance attainment. A number of more specific points may be highlighted with regard to this general conclusion. First, the Dualistic Model demonstrates that both harmonious and obsessive passion may indirectly facilitate performance attainment, but that the two types of passion engender differential well-being and achievement goal processes. With regard to SWB, in both studies, the findings uniformly revealed that harmonious passion is positively related to SWB. It would thus appear that involvement in an activity central to one's life contributes to one's psychological adjustment to the extent that harmonious passion underlies such involvement. Conversely, similar high activity involvement triggered by obsessive passion may not afford well-being benefits (Study 1) and may even have negative well-being implications (Study 2). Future research is needed to identify the psychological processes through which the two types of passion are linked to SWB, as well as to document the directionality of the passion-SWB relation. Past research on passion has shown that during task engagement, harmonious passion is associated with positive affect, while obsessive passion is unrelated to positive affect and can even predict negative affect (Mageau et al., 2005; Vallerand et al., 2003, Study 1). Thus, one interesting hypothesis is that engaging in a passionate activity out of harmonious passion leads to the cumulative experience of positive affect that over time leads to increased SWB. Research by Frederickson and Joiner (2002) has shown the existence of an upward spiral, whereby positive affect leads to higher levels of SWB, which leads to subsequent experiences of positive affect and so on. Such a spiral may be triggered by the impact of harmonious passion on positive affect. Similarly, a downward spiral involving negative affect and SWB may also exist and may be induced by obsessive passion. Future research is needed to test these hypotheses.

With regard to achievement goals (Study 2), harmonious passion was shown to predict mastery goals alone, while obsessive passion

predicted all three types of goals. The results for harmonious passion are in line with those obtained in earlier passion research showing that harmonious passion leads to an adaptive achievement process characterized by concentration and flow during task engagement (Mageau et al., 2005; Vallerand et al., 2003). On the other hand, the results for obsessive passion suggest that it triggers a conflicted achievement process whereby the individual attempts to regulate achievement concerns in multiple ways, some effective and some inimical to performance. This analysis is in line with past research showing that obsessive passion is either unrelated to or negatively related to concentration and flow, but is positively linked to rumination about the passionate activity (Ratelle et al., 2004; Vallerand et al., 2003, Study 1). Clearly, obsessive passion is not an optimal motivational foundation for effortful pursuits in the achievement domain in that it evokes detrimental as well as beneficial processes.

A second conclusion that may be drawn from the present findings is that they provide an enriched understanding of the performance-attainment process in general. A number of points may be highlighted with regard to this issue. A first is that the present findings confirm the role of deliberate practice as an important predictor of performance attainment. Ericsson et al. (1993) have contended that deliberate practice is a, if not the, central contributor to expert performance. The present research provides strong support for this proposition across two disciplines, using several different performance indices. Past research on the link between deliberate practice and performance has focused on the long-term relationship between the two variables, sometimes involving several years. For instance, much research indicates that elite performance in various activities such as chess, music, and sports at the international level necessitates involvement in deliberate practice for at least 10 years (e.g., Ericsson et al., 1993; Ericsson & Lehmann, 1996; Starkes, 2001). The present series of studies complements the above research by showing the usefulness of the concept of deliberate practice for predicting performance at the short-term level (within the span of a few months). Furthermore, the results of Study 2 revealed that a focus on deliberate practice involving both short- and long-term strategies is useful in predicting performance. Future research distinguishing these two types of deliberate practice may prove fruitful in advancing our understanding of performance attainment as a function of the experience level of the performer. For instance, it is possible that while

short-term deliberate practice is always important, long-term deliberate practice is especially useful as performers get closer to their chosen career or move up the ladder of excellence.

Another issue related to the performance attainment process is that it would appear that passion represents an answer to Ericsson et al.'s (1993) question regarding the nature of the motivation responsible for leading individuals to engage in deliberate practice. Indeed, the present research unequivocally reveals that both harmonious and obsessive passion underlie long-term commitment to activities aimed at high performance attainment. Participants in the present research had been engaging in their chosen activity multiple hours per week (sometimes up to 14 hours) and for several years. The present results clearly indicate that both types of passion positively predict deliberate practice. Therefore, it would appear that for someone to display sustained involvement in achievement activities over time, passion has to be implicated in the performance-attainment process.

However, the results of Study 2 also reveal that there would appear to be two roads leading to performance attainment in an activity one cares deeply about. The first road is the most straightforward. It originates from harmonious passion and leads the person to focus exclusively on the goal of trying to master the activity. Such a goal leads the person to engage fully in activities specifically aimed at performance improvement. Eventually, such deliberate practice indeed leads to high performance attainment. What is interesting about this first path is that the performer is not focused on the resulting performance itself, but is solely focused on mastering the activity. Yet, by focusing on the mastery process, performance attainment is facilitated. Furthermore, other outcomes such as on-task positive affect and flow (Vallerand et al., 2003, Study 1), as well as high levels of SWB in general, are experienced.

The second road on the journey to performance attainment originates from obsessive passion. Such a road is not as straightforward as the first as it entails the pursuit of several different goals ranging from mastery to performance avoidance. On the one hand, the adoption of mastery goals leads to involvement in deliberate practice and to performance attainment; on the other hand, the adoption of performance-avoidance goals tends to have a deleterious influence on performance. Thus, obsessive passion leads to the adoption of both adaptive and maladaptive achievement goals with respect to performance outcomes. If one considers the fact that this second

path to performance also prevents people from fully enjoying themselves during activity engagement (Vallerand et al., 2003), and does not facilitate (and may even undermine) SWB in general, such a road to excellence may clearly be deemed less than optimal. It would thus appear that the popular image of obsessively passionate performers who focus exclusively on their activity at the expense of other aspects of their lives, and who end up achieving high levels of performance may only represent a part of the picture. It seems that it is also possible for individuals to be harmoniously passionate toward their activity and to reach high levels of performance but, at the same time, to experience high levels of happiness.

A third conclusion that may be drawn from the present findings has to do with the links between achievement goals and performance outcomes. The extant research on mastery goals indicates that they often do not have a direct effect on performance but, instead, exert an indirect influence by prompting an assortment of adaptive processes (e.g., task absorption, deep processing while studying, persistence; see Urdan, 1997; Elliot, 2005). The present results fit this pattern nicely in that mastery goals did not have a direct influence on performance but were a positive predictor of an important process, deliberate practice, that did have a facilitative impact on performance. We point to deliberate practice as an understudied process in the achievement goal literature and encourage other researchers to explore this powerful variable further as predictor of other important outcomes such as task choice and intrinsic motivation.

As with performance-approach goals, they represent a consistent predictor of performance attainment in the achievement goal literature (Elliot & Moller, 2003). The typical finding is that performance-approach goals directly facilitate performance in the classroom context, and this is precisely what we found in Study 2 of the present research. The findings obtained with performance-avoidance goals were also in line with past findings where they have been found to have a negative influence on performance outcomes. Although only a trend in this direction was observed in Study 2, past research in the area of achievement goals (see Elliot, 2005; Elliot & Moller, 2003) demonstrates that performance-avoidance goals undermine performance attainment in the realm of education and represents a problematic form of regulation. Nevertheless, more empirical work is needed to systematically explore the reasons why the effect was not significant in Study 2.

Although the results from the present research are consistent with a causal interpretation, the data are correlational in nature and, therefore, definitive conclusions about causality are not warranted. It would be interesting in subsequent research to employ experimental designs to examine various aspects of our model under more controlled laboratory conditions. Another important aspect of our research to consider is that we examined a small subset of performance contexts (dramatic arts and psychological study) and did so using young adult samples. It remains to be seen whether the results obtained in the present research generalize to other areas of human performance and other age groups. Finally, it should be underscored that while objective measures of performance were employed in both studies, no baseline levels of performance were assessed. Future research should do so in order to control for differences that performers may display in initial performance levels and to more clearly assess the role of passion in performance changes that may take place over time.

In sum, the present findings highlight the relevance of the Dualistic Model of Passion for understanding performance attainment in various fields of achievement. Future research is needed in order to more completely understand the intricacies of the psychological processes through which passion contributes to performance attainment, and to further determine the generalizability of such effects in other fields of human endeavor.

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