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Passion and Motivation for Studying:  
Predicting Academic Engagement and Burnout in University Students

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**Abstract**

Research on the dualistic model of passion (Vallerand et al., 2003) has investigated harmonious and obsessive passion in many domains. However, few studies have investigated passion for studying and the role passion for studying plays in student engagement and well-being. The present study investigated the relationships between harmonious and obsessive passion for studying and academic engagement (vigor, dedication, and absorption) and burnout (exhaustion, cynicism, and inefficacy) in 105 university students, controlling for the effects of autonomous and controlled motivation. Both harmonious and obsessive passion explained variance in academic engagement and burnout beyond autonomous and controlled motivation: harmonious passion predicted higher dedication and lower cynicism, obsessive passion predicted higher absorption, and both harmonious and obsessive passion predicted higher vigor and lower inefficacy. The findings suggest that passion for studying explains individual differences in students' academic engagement and burnout beyond autonomous and controlled motivation and thus deserves more attention from educational psychology.

Keywords: passion; academic engagement; student burnout; motivation; self-concordance theory

## Passion and Motivation for Studying:

## Predicting Academic Engagement and Burnout in University Students

Passion is defined as “a strong inclination toward an activity that individuals like (or even love), that they find important, [and] in which they invest time and energy” (Vallerand et al., 2007, p. 507). According to the dualistic model of passion, however, it is important to differentiate two forms of passion: harmonious passion and obsessive passion (Vallerand et al., 2003). In harmonious passion, individuals engage in an activity entirely of their own free will, and engaging in the activity does not pose a conflict to other life domains. Here, the individual controls the passion. In obsessive passion, individuals engage in an activity because of intra- or interpersonal pressure, and engaging in the activity diverts time and resources away from other life domains. Here, the passion controls the person (Vallerand, 2008; Vallerand et al., 2003, 2007).

Research on harmonious and obsessive passion has investigated passion in various domains such as work, sports, dance, music, gambling, and digital gaming (e.g., Carbonneau, Vallerand, Fernet, & Guay, 2008; Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Rip, Fortin, & Vallerand, 2006; Vallerand et al., 2003, 2008; Wang, Khoo, Liu, & Divaharan, 2008). Overall, findings show that harmonious passion tends to be associated with positive characteristics, processes, and outcomes (e.g., positive emotions). In contrast, obsessive passion tends to be associated with negative characteristics, processes, and outcomes (e.g., negative emotions) (see Vallerand, 2008, 2010, for comprehensive reviews).

Surprisingly, only two studies so far have investigated passion for studying (Vallerand et al., 2007, Studies 1 and 2). Results showed that both harmonious and obsessive passion predicted deliberate practice (i.e., the amount of free time spent practicing) which in turn predicted increased objective performance in samples of dramatic arts students and psychology undergraduates. Moreover, only harmonious passion was positively related to

subjective well-being in both studies, whereas obsessive passion was either unrelated to well-being (Study 1) or negatively related (Study 2). How harmonious and obsessive passion for studying are related to other variables that are central to the student experience, however, has not yet been investigated.

### **Passion, Academic Engagement, and Academic Burnout**

Academic engagement is a variable of central interest to educational psychology. Regarding school students, one of the most prominent models of academic engagement is Skinner and colleagues' model of engagement and achievement (Skinner, Wellborn, & Connell, 1990). In this model, academic engagement is seen as the outcome of a process in which the school provides a social context that makes students feel competent, autonomous, and related (Connell & Wellborn, 1991; Skinner, Furrer, Marchand, & Kindermann, 2008). Academic engagement can be behavioral or emotional. Behavioral engagement is measured by indicators such as effort, exertion, intensity, and absorption; and emotional engagement by indicators such as interest, enjoyment, enthusiasm, and vitality (Skinner et al., 2008; Skinner, Kindermann, & Furrer, 2009).

In university students, by comparison, academic engagement is seen as a central part of student engagement conceptualized as the "outcome of a combination of intentions and successful academic and social integration within the university" (Horstmanshof & Zimitat, 2007, p. 705) which has been shown to be an important variable in research on student retention and a protective factor against student attrition (Tinto, 1993). On an individual level, academic engagement captures students' involvement with their studies as indicated by the amount of energy students devote to their studies. Consequently, academic engagement is usually captured with multiple indicators such as how much students enjoy their studies (academic orientation), how consistently they work throughout the term (academic application), and how much time and energy they invest in their studies (e.g., hours per week

spent preparing for class; Horstmanshof & Zimitat, 2007; Salamonson, Andrew, & Everett, 2009).

A recent addition to research on university students' academic engagement was introduced by Schaufeli and colleagues based on their research on employee engagement and burnout at work (Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002). Schaufeli and colleagues regard academic engagement as "a positive and fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002, p. 74). Vigor characterizes the energy one invests in studying, dedication the meaning and purpose one experiences when studying, and absorption the extent to which one is engrossed in one's studies (Schaufeli & Bakker, 2004). Studies investigating how the three aspects of academic engagement, proposed by Schaufeli and colleagues, relate to university students' academic and psychological adjustment found that all three aspects of engagement were associated with higher levels of academic performance (Schaufeli, Martínez, et al., 2002) and higher personal standards and organization (Zhang, Gan, & Cham, 2006) as well as higher levels of proactive and preventive coping and lower levels of perceived stress (Gan, Yang, Zhou, & Zhang, 2007). With this, the studies provide preliminary evidence that academic engagement, as conceptualized by Schaufeli and colleagues, captures important aspects of the student experience and provides a useful addition to the study of students' academic engagement.

Whereas research on academic engagement based on Skinner and colleagues' model contrasts academic engagement with disaffection (Skinner et al., 1990, 2008) and disengagement (e.g., Salamonson et al., 2009), studies based on Schaufeli and colleagues' model contrast academic engagement with academic burnout. Burnout is a psychological syndrome characterized by exhaustion, cynicism, and inefficacy (Schaufeli, Leiter, Maslach, & Jackson, 1996). While the study of burnout was originally restricted to people working in

helping or teaching professions (such as healthcare workers or school teachers), burnout has now been recognized as a frequent problem in employees of many other professions (see Maslach, Schaufeli, & Leiter, 2001, for a review). Moreover, it is a frequent problem in non-occupational samples, for example, competitive athletes where it can affect even young athletes (e.g., Gould, Udry, Tuffey, & Loehr, 1996; Hill, Hall, & Appleton, 2010).

Burnout in university students has not yet received as much attention as burnout in employees and athletes, but there is increasing recognition that burnout is a problem affecting many college and university students (e.g., Jacobs & Dodd, 2003; Schaufeli, Martínez, et al., 2002). Until recently, research on burnout in university and college students was restricted to students in supervisory and advisory roles such as research and teaching assistants (Jacobs & Dodd, 2003). However, it is now recognized that, although students are not formally employed by the university, their studies encompass structured and often coercive activities (e.g., attending class and submitting assignments) that can be considered “work” (Noushad, 2008). In addition, research on burnout in students was hampered by the lack of validated instruments specifically designed to measure burnout in students. However, with such measures now available, it is becoming clear that undergraduate university students experience substantial levels of burnout (Jacobs & Dodd, 2003). Moreover, studies investigating burnout in university students confirm that academic burnout is a significant problem associated with poor academic performance (Schaufeli, Martínez, et al., 2002), low self-efficacy (Yang & Farn, 2005), negative perceptions of the learning environment and available support (Salmela-Aro, Kiuru, Pietikäinen, & Jokela, 2008; Yang & Farn, 2005), high levels of perceived workload (Jacobs & Dodd, 2003), concern over mistakes and doubts about action (Zhang et al., 2006), and low coping effectiveness (Gan, Shang, & Zhang, 2007).

To our knowledge, no study so far has investigated the relationships between harmonious and obsessive passion for studying and the different aspects of academic engagement posited by Schaufeli and colleagues. Moreover, no study has investigated the relationships between the two forms of passion for studying and academic burnout. There are, however, studies on the relationship between passion and burnout in employees: one study investigating passion and burnout in school teachers (Carbonneau et al., 2008) and two further studies investigating passion and burnout in nurses (Vallerand, Paquet, Philippe, & Charest, 2010, Studies 1 and 2). All three studies found that harmonious passion showed a negative correlation with burnout: Employees who reported high levels of harmonious passion reported lower levels of burnout compared to employees who reported low levels of harmonious passion. In contrast, the findings on obsessive passion and burnout were more equivocal. Whereas Carbonneau and colleagues found a positive correlation between obsessive passion and burnout, Vallerand and colleagues found a small positive correlation between obsessive passion and burnout, but only when regarding longitudinal correlations. They found no significant correlation between obsessive passion and burnout when regarding cross-sectional correlations.

### **The Role of Autonomous and Controlled Motivation**

While evidence suggests that harmonious passion is associated with lower burnout in employees (and hint that obsessive passion may be associated with higher burnout), it is unclear whether the findings extend to academic burnout in students. Moreover, it is unclear whether the two forms of passion make a unique contribution to explaining differences in students' academic engagement and burnout—or whether these differences can be better explained by other motivational constructs, particularly autonomous and controlled motivation. There are two reasons why autonomous and controlled motivation should be considered when investigating the relationships between passion and academic engagement

and burnout. The first reason is that the dualistic model of passion (Vallerand et al., 2003) suggests a close relationship between the two forms of passion and autonomous and controlled motivation, positing that whether harmonious or obsessive passion will arise depends on the locus of behavioral internalization. Harmonious passion arises from autonomous behavioral internalization, occurring when individuals incorporate an activity into their self-identity freely, without incorporating any behavioral contingences or rewards. In contrast, obsessive passion arises from controlled behavioral internalization, occurring when individuals incorporate an activity into their self-identity freely, but also incorporate the behavioral contingences or rewards (Vallerand et al., 2003). According to Sheldon and Elliot's (1999) self-concordance model, behaviors will undergo autonomous internalization if they are regulated by *autonomous motivation*, that is, when behavior is regulated by intrinsic reasons (the behavior is performed because it is enjoyable) or identified reasons (the behavior is performed because it is in line with one's goals and values). In contrast, behaviors will undergo controlled internalization if they are regulated by *controlled motivation*, that is, when behavior is regulated by introjected reasons (the behavior is performed because of contingent self-evaluation) or external reasons (the behavior is performed because of external demands) (Sheldon & Elliot, 1999; see also Sheldon, 2002).<sup>1</sup>

The second reason is that there is a large body of research demonstrating that autonomous motivation in students is related to positive characteristics, processes, and outcomes whereas controlled motivation in students is related to negative characteristics, processes, and outcomes. Students high in autonomous motivation, compared to students high in controlled motivation, show higher levels of creativity (e.g., Amabile, 1985), persistence (e.g., Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004), effective learning strategies (e.g., Grolnick & Ryan, 1987), performance (e.g., Grolnick, Ryan, & Deci, 1991), vitality (e.g., Nix, Ryan, Manly, & Deci, 1999), and subjective well-being (e.g., C. Levesque,



Zuehlke, Stanek, & Ryan, 2004) as well as lower levels of stress (e.g., Baker, 2004; for reviews, see Guay, Ratelle, & Chanal, 2008; Ryan & Deci, 2000). Moreover, autonomous and controlled motivation have been shown to be related to burnout. According to the motivational model of job burnout (Léveillé, Blais, & Hess, 2000, as cited in M. Levesque, Blais, & Hess, 2004), employees high in autonomous motivation experience lower levels of burnout whereas employees low in autonomous motivation experience higher burnout (M. Levesque et al., 2004). Similarly, employees high in autonomous motivation show higher levels of engagement in their job (e.g., higher job involvement) compared to employees high in controlled motivation (Breugh, 1985; see Gagné & Deci, 2005, for a review). While it is unclear if these findings also hold for academic burnout in students, they suggest that is important to control for autonomous and controlled motivation for studying when investigating the relationships between harmonious and obsessive passion for studying and academic burnout.

### **The Present Research**

Against this background, the aim of the present research was to investigate the relationships between harmonious and obsessive passion for studying and academic engagement (vigor, dedication, and absorption) and burnout (exhaustion, cynicism, and inefficacy) in university students while controlling for the effects of autonomous and controlled motivation. Because both forms of passion are associated with increased activity engagement (e.g., the amount of time spent performing the activity; Mageau & Vallerand, 2007), we expected both harmonious and obsessive passion for studying to be associated with higher levels of academic engagement. However, we expected only harmonious passion to be associated with lower levels of academic burnout, in line with findings from studies on passion and burnout in employees (Carbonneau et al., 2008; Vallerand et al., 2010). In contrast, because these studies produced equivocal findings regarding obsessive passion and

burnout, we had no clear expectations regarding the relationships between obsessive passion for studying and academic burnout. Finally, we aimed to explore whether harmonious and obsessive passion for studying would show unique associations with academic engagement and burnout, independent of autonomous and controlled motivation, by conducting hierarchical regression analyses to examine whether the two forms of passion would explain variance in academic engagement and burnout above and beyond the variance explained by autonomous and controlled motivation for studying.

## Method

### Participants and Procedure

A sample of 105 students (12 male, 93 female) was recruited at a large British university. Two students were excluded from the analyses (see Preliminary Analyses below), resulting in a final sample of  $N = 103$  students (11 male, 92 female). Mean age of participants was 20.0 years ( $SD = 2.4$ , range = 18-37). All students were undergraduate students registered in psychology programs and were in their second year of study. Second-year students were chosen because, unlike first-year students who have just arrived at university, they have already been studying for one year and thus can provide informed answers to questions about how passionate they are for studying, how engaged they are in studying, and how burned out they feel from studying (see also Jacobs & Dodd, 2003; Yang & Farn, 2005).

### Measures

**Passion for studying.** To measure harmonious and obsessive passion for studying, we used the Passion Scale (Vallerand et al., 2003) with the items adapted to measure passion for studying psychology. The scale comprises 12 items of which 6 measure harmonious passion (e.g., “Studying psychology is in harmony with the other activities in my life”) and 6 measure obsessive passion (e.g., “I have almost an obsessive feeling for studying psychology”). Students responded to all items on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly*

*agree*). The Passion Scale is a widely used measure of passion for various activities and has demonstrated reliability and validity in numerous studies (e.g., Mageau & Vallerand, 2007; Vallerand et al., 2003, 2008; see also Vallerand, 2008, 2010).

**Academic engagement.** To measure academic engagement, we used the Utrecht Work Engagement Scale-Student (UWES-S; Schaufeli, Salanova, et al., 2002) which comprises 17 items of which 6 measure vigor (e.g., “When studying I feel strong and vigorous”), 5 dedication (e.g., “I am proud of my studies”), and 6 absorption (e.g., “When I am studying, I forget everything else around me”). Students responded to all items on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Previous research has provided evidence for the scales’ reliability and validity in university students (Bresó, Schaufeli, & Salanova, in press; Gan, Yang, et al., 2007; Mostert, Pienaar, Gauche, & Jackson, 2007; Schaufeli, Martínez, et al., 2002; Schaufeli, Salanova, et al., 2002; Zhang et al., 2007; Uludağ & Yaratán, 2010).

**Academic burnout.** To measure academic burnout, we used the Maslach Burnout Inventory-Student Survey (MBI-SS; Schaufeli, Martínez, et al., 2002) which comprises 15 items of which 5 measure exhaustion (e.g., “I feel emotionally drained by my studies”), 4 cynicism (e.g., “I have become more cynical about the usefulness of my studies”), and 6 inefficacy (e.g., “I can effectively solve the problems that arise in my studies,” reverse-coded). Students responded to all items on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Previous research has provided evidence for the scales’ reliability and validity in university students (Bresó et al., in press; Gan, Shang, & Zhang, 2007; Mostert et al., 2007; Schaufeli, Martínez, et al., 2002; Schaufeli, Salanova, et al., 2002; Uludağ & Yaratán, 2010).

**Motivation for studying.** To measure autonomous and controlled motivation for studying, we followed Sheldon’s idiographic method that uses personal goals—generated by

the participants themselves—as the units of motivational analysis (Sheldon, 2002; Sheldon & Elliot, 1999). Students wrote down two personal goals that they wanted to achieve with studying psychology. Afterwards, they rated each goal with respect to four reasons (see Sheldon & Elliot, 1999, p. 486): intrinsic reasons (“I pursue this goal because of the fun and enjoyment that it provides me”), identified reasons (“... because I really believe it’s an important goal to have”), introjected reasons (“... because I would feel ashamed, guilty, or anxious if I didn’t”), and external reasons (“... because someone else wants me to or because the situation demands it”) using a 7-point point scale from 1 (*disagree completely*) to 7 (*agree completely*). Following Sheldon and Elliot (1999), the ratings for intrinsic and identified reasons were averaged across the two goals to form a measure of autonomous motivation, and the ratings for introjected and external reasons were averaged to form a measure of controlled motivation. This procedure is a widely used measure of autonomous and controlled motivation and has demonstrated reliability and validity in numerous studies (e.g., Gore & Cross, 2006; Sheldon & Elliot, 1999; Stoeber & Eismann, 2007).

### **Preliminary Analyses**

**Descriptive statistics.** For all scales, mean scores were computed by averaging responses across items (see Table 1). Moreover, Cronbach’s alphas were computed to estimate the scores’ reliability. All scores showed Cronbach’s alphas above the .60 considered acceptable for research purposes (Nunnally, 1967), except autonomous motivation which showed a marginally acceptable alpha of .59. As autonomous motivation was a variable of central interest, it was retained for our analyses.

**Multivariate outliers.** Because multivariate outliers can significantly distort results of correlation and regression analyses, we inspected the data for multivariate outliers. Two students (one male, one female) showed a Mahalanobis distance greater than the critical value

of  $\chi^2(12) = 32.91, p < .001$  (see Tabachnick & Fidell, 2007) and were excluded from the analyses.

**Gender.** To examine the data for possible gender differences, we computed a MANOVA with gender as the between-participants factor and the 10 study variables as dependent variables. The effect of gender was nonsignificant with  $F(10, 92) < 1, p > .80$ . Consequently, we collapsed the data across gender.

## Results

### Correlation Analyses

First, we inspected the bivariate correlations between passion for studying, academic engagement, academic burnout, and motivation for studying (see Table 1). As expected, both harmonious and obsessive passion showed positive correlations with all three aspects of academic engagement (vigor, dedication, and absorption). Moreover, only harmonious passion showed negative correlations with all three aspects of academic burnout (exhaustion, cynicism, and inefficacy). Furthermore, harmonious passion for studying showed a positive correlation with autonomous motivation for studying. Students who indicated higher autonomous motivation for the personal goals they pursued with their studies also indicated higher harmonious passion for studying than students who indicated lower autonomous motivation for the personal goals they pursued with their studies.

— Insert Table 1 about here —

Other correlations were not in line with expectations. Differently from what was expected from Vallerand et al.'s (2003) theory which links obsessive passion to controlled motivation, obsessive passion failed to show a positive correlations with controlled motivation. Moreover, differently from previous findings' showing a positive correlation between obsessive passion and burnout in employees (Carbonneau et al., 2008), obsessive passion for studying showed *negative* correlations with two aspects of academic burnout

(cynicism and inefficacy) indicating that, in our sample of second-year university students, obsessive passion for studying was associated with lower burnout, not higher burnout.

However, note that, in line with previous findings (e.g., Vallerand et al., 2003), harmonious passion and obsessive passion showed a significant positive correlation (see Table 1). Consequently, it was important to examine if the negative correlation of obsessive passion with academic burnout was due to the overlap between the two forms of passion. Moreover, autonomous motivation showed the same correlation pattern as harmonious passion: positive correlations with all three aspects of academic engagement and negative correlations with all three aspects of academic burnout (see again Table 1). Consequently, it was also important to examine whether harmonious passion would still explain variance in academic engagement and burnout after controlling for motivation for studying.

### **Regression Analyses**

To investigate the unique relationships of the two forms of passion with academic engagement and burnout, two sets of regression analyses were conducted. In the first set, we conducted simple regression analyses investigating the unique effects of the two forms of passion when predicting the different aspects of engagement and burnout (Model 1). In the second set, we conducted hierarchical regression analyses investigating the unique effects of the two forms of passion, additionally controlling for motivation for studying (Model 2). Model 1 examined how harmonious and obsessive passion predicted academic engagement and burnout when the overlap between the two forms of passion was controlled for. Model 2 examined whether harmonious and obsessive passion predicted variance in academic engagement and burnout above and beyond variance already explained by students' motivation for studying.

— Insert Table 2 about here —

First, we examined how passion and motivation predicted the three aspects of

academic engagement: vigor, dedication, and absorption (see Table 2). When the two forms of passion were used as predictors ignoring motivation (Model 1), harmonious passion predicted unique variance in all three aspects of academic engagement indicating that higher levels of harmonious passion were associated with higher levels of vigor, dedication, and absorption. In contrast, obsessive passion predicted unique variance only in two aspects of academic engagement: vigor and absorption. Here, higher levels of obsessive passion uniquely predicted higher levels of vigor and absorption, but not dedication (cf. correlations in Table 1). When motivation was entered before passion (Model 2), the pattern of significant regression coefficients remained unchanged, again with one exception: harmonious passion no longer significantly predicted absorption when autonomous and controlled motivation for studying were controlled for.

— Insert Table 3 about here —

Next, we examined how passion and motivation predicted the three aspects of academic burnout: exhaustion, cynicism, and inefficacy (see Table 3). When the two forms of passion were used as predictors ignoring motivation (Model 1), harmonious passion predicted unique variance in all three aspects of academic burnout indicating that higher levels of harmonious passion were associated with lower levels of exhaustion, cynicism, and inefficacy. In contrast, obsessive passion predicted unique variance only in one aspect: inefficacy. Higher levels of obsessive passion uniquely predicted lower levels of inefficacy, but not cynicism (cf. correlations in Table 1). When motivation was entered before passion (Model 2), the pattern of significant regression coefficients remained unchanged, with one exception: harmonious passion no longer significantly predicted exhaustion when autonomous and controlled motivation for studying were controlled for.

## **Discussion**

The aim of the present research was to investigate the relationships between

harmonious and obsessive passion for studying and academic engagement and burnout in university students, following Schaufeli and colleagues' multidimensional model of academic engagement and burnout (Schaufeli, Martínez, et al., 2002; Schaufeli, Salanova, et al., 2002) and controlling for the influence of autonomous and controlled motivation for studying. As expected, harmonious passion for studying showed positive correlations with all three aspects of academic engagement (vigor, dedication, and absorption) and negative correlations with all three aspects of academic burnout (exhaustion, cynicism, and inefficacy). Moreover, harmonious passion explained variance in two aspects of engagement (vigor and dedication) and two aspects of burnout (cynicism and inefficacy) after obsessive passion and motivation for studying were controlled for. Finally, as was expected, harmonious passion showed a positive correlation with autonomous motivation for studying, thus confirming the dualistic model of passion's proposition that harmonious passion is closely linked to autonomous motivation (Vallerand et al., 2003, 2006). In contrast, the findings on obsessive passion were only partly in line with expectations. As expected, obsessive passion for studying showed positive correlations with all three aspects of engagement (vigor, dedication, and absorption). Moreover, obsessive passion explained variance in two aspects of engagement (vigor and absorption) after harmonious passion and motivation for studying were controlled for. Unexpectedly, however, obsessive passion showed *negative* correlations with two aspects of burnout (cynicism and inefficacy). Moreover, obsessive passion predicted lower levels of inefficiency even after the overlap with harmonious passion and motivation for studying was controlled for.

The findings provide the first evidence that harmonious passion for studying is associated with higher academic engagement and lower academic burnout in university students, thus expanding on previous findings on passion in employees (Carbonneau et al., 2008; Mageau & Vallerand, 2007). Moreover, they indicate that harmonious and obsessive



passion show unique relationships with central aspects of academic engagement and burnout. When the overlap between the two forms of passion as well as autonomous and controlled motivation were taken into account, harmonious passion showed unique positive relationships with vigor and dedication and unique negative relationships with cynicism and inefficacy, whereas obsessive passion showed unique positive relationships with vigor and absorption and a unique negative relationship with inefficacy. In this, the relationships with vigor (positive) and inefficacy (negative) are particularly noteworthy because they indicate that both forms of passion independently make a significant contribution to these aspects of academic engagement and academic burnout.

Whereas the finding that obsessive passion showed positive correlations with all three aspects of academic engagement is in line with previous findings linking obsessive passion to higher engagement and performance (activity engagement: Mageau & Vallerand, 2007; coach-rated performance: Vallerand et al., 2008), the findings that obsessive passion showed negative correlations with two aspects of academic burnout (cynicism and inefficacy) deserve further attention because Carbonneau et al. (2008) found obsessive passion to be positively correlated with burnout (exhaustion and cynicism) in teachers. However, there are important differences between Carbonneau et al.'s (2008) study and the present study. First, in Carbonneau et al.'s study, harmonious and obsessive passion showed a negative correlation. In contrast, the present study found a positive correlation, as have previous studies with students (e.g., Vallerand et al., 2008; Vallerand et al., 2007). Students high in obsessive passion also tended to be high in harmonious passion which—as the regression analyses controlling for the overlap between the two forms of passion indicated—may explain the negative correlation between obsessive passion and cynicism (cf. Table 1 with Table 2). Second, the teachers in Carbonneau et al.'s study had been teaching for an average of 16 years. In contrast, the students in the present study were only in their second year of study.

Consequently, the time studying may have been too short for obsessive passion for studying to lead to burnout whereas obsessive passion for teaching had sufficient time to do harm in Carbonneau et al.'s study (see also Vallerand et al., 2010). Third and finally, the teachers in Carbonneau et al.'s study were on average 43 years old and thus likely to have other important areas of life (e.g., family life/children) in which an obsessive passion for their job would interfere and negatively impact. If so, obsessive passion for the job, dominating their lives, would cause more problems for teachers than obsessive passion for studying would cause for students, for whom studying should have first priority and be the dominant area of their lives.

The present study had a number of limitations. First, the sample was predominantly female, so it is unclear to what degree the present findings are representative for male university students. Whereas the high percentage of female students in the present sample is consistent with the high percentage of female students among British undergraduate psychology students, future studies should aim at a more balanced gender representation and include students from other, more gender-balanced undergraduate programmes (e.g., business studies or law). Second, the present study was cross-sectional so the findings from the regression analyses of passion predicting academic engagement and burnout cannot be interpreted in a temporal or causal sense. Future studies should therefore employ longitudinal designs to establish the temporal and causal pathways between the variables (e.g., Vallerand et al., 2010). Third, the reliability of our measure of autonomous motivation was only marginally acceptable which may have been due to our decision to use self-generated goals as the units of motivational analysis (Sheldon, 2002). Consequently, future studies may want to replicate the present findings with conventional questionnaire measures of autonomous and controlled motivation that use a standard set of items—instead of self-generated goals—to avoid problems with reliability (e.g., the Academic Motivation Scale; Vallerand et al., 1992).

Despite these limitations, the present findings make an important contribution to our understanding of how passion and motivation for studying are related to academic engagement and burnout in university students. They confirm that harmonious passion and autonomous motivation are positive forms of motivation associated with higher levels of academic engagement and lower levels of academic burnout. Moreover, they show that both harmonious and obsessive passion explain variance in academic engagement and burnout above and beyond variance explained by autonomous and controlled motivation for studying. Thus the present findings may be a stepping stone for future studies on how harmonious and obsessive passion affect academic engagement and burnout in school and university students.

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## Footnotes

<sup>1</sup>Sheldon and Elliot's model draws closely on Deci and Ryan's self-determination theory and their model of motivation (Deci & Ryan, 1985; Ryan & Deci, 2000). However, there are some important differences. Deci and Ryan suggest a continuum of motivation ranging from amotivation over extrinsic motivation to intrinsic motivation, differentiating six regulatory styles: non-regulation (indicative of amotivation), external, introjected, identified, and integrated regulation (indicative of extrinsic motivation in ascending order of their degree of internality), and intrinsic regulation (indicative of intrinsic motivation). Consequently, Deci and Ryan's model regards identified regulation as indicative of extrinsic motivation. In contrast, Sheldon and Elliot's model regards identified reasons as indicative of autonomous motivation.

Table 1

*Passion for Studying, Academic Engagement, Academic Burnout, and Motivation for Studying: Correlations and Descriptive Statistics*

Variable	1	2	3	4	5	6	7	8	9	10
Passion										
1. Harmonious passion										
2. Obsessive passion	.32**									
Academic engagement										
3. Vigor	.58***	.47***								
4. Dedication	.65***	.32**	.67***							
5. Absorption	.41***	.52***	.70***	.61***						
Academic burnout										
6. Exhaustion	-.22*	-.09	-.45***	-.26**	-.34***					
7. Cynicism	-.46***	-.26**	-.65***	-.62***	-.51***	.61***				
8. Inefficacy	-.63***	-.35***	-.61***	-.77***	-.54***	.32**	.60***			
Motivation										
9. Autonomous motivation	.44***	.09	.37***	.45***	.32***	-.27**	-.38***	-.45***		
10. Controlled motivation	-.15	-.06	-.23*	-.25*	-.24*	.32***	.26**	.14	-.13	
<i>M</i>	5.01	2.38	3.79	4.95	3.96	4.24	3.48	2.92	5.47	3.45
<i>SD</i>	0.95	0.87	1.01	1.03	1.13	1.13	1.41	0.89	0.93	1.43
Cronbach's alpha	.82	.73	.76	.83	.67	.75	.82	.78	.59	.67

*Note.*  $N = 103$ . Passion = passion for studying; Motivation = motivation for studying. All scores are mean scores (see Method section).

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

Table 2

*Multiple Regressions: Passion and Motivation for Studying as Predictors of Academic Engagement*

Variable	Academic engagement					
	Vigor		Dedication		Absorption	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
<i>Model 1</i>						
Passion	.431***		.435***		.333***	
Harmonious passion		.48***		.61***		.28**
Obsessive passion		.32***		.12		.43***
<i>Model 2</i>						
Step 1: Motivation	.171***		.239***		.147***	
Autonomous motivation		.35***		.42***		.30**
Controlled motivation		-.19*		-.20*		-.21*
Step 2: Passion	.297***		.250***		.248***	
Autonomous motivation		.15		.20*		.19*
Controlled motivation		-.13		-.14		-.17*
Harmonious passion		.39***		.50***		.16
Obsessive passion		.32***		.13		.44***

*Note.*  $N = 103$ . Passion = passion for studying; Motivation = motivation for studying.  $\beta$  = standardized regression coefficient.  $\Delta R^2$  = change in  $R^2$ .

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

Table 3  
*Multiple Regressions: Passion and Motivation for Studying as Predictors of Academic Burnout*

Variable	Academic burnout					
	Exhaustion		Cynicism		Inefficacy	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
<i>Model 1</i>						
Passion	.051		.221***		.424***	
Harmonious passion		-.22*		-.42***		-.58***
Obsessive passion		-.02		-.12		-.17*
<i>Model 2</i>						
Step 1: Motivation	.157***		.190***		.213***	
Autonomous motivation		-.23*		-.36***		-.44***
Controlled motivation		.30**		.21*		.09
Step 2: Passion	.008		.105**		.254***	
Autonomous motivation		-.19		-.22*		-.23**
Controlled motivation		.29**		.17*		.03
Harmonious passion		-.09		-.29**		-.47***
Obsessive passion		-.03		.13		-.18*

*Note.*  $N = 103$ . Passion = passion for studying; Motivation = motivation for studying.  $\beta$  = standardized regression coefficient.  $\Delta R^2$  = change in  $R^2$ .

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