



# On passion and heavy work investment: personal and organizational outcomes

On passion and  
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investment

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## Abstract

**Purpose** – The present research aimed to conceptually position passion for work as a predictor of HWI, as well as to assess the short and long-term influence of passion for work on workers' satisfaction, depression and turnover intentions. In addition, the paper tests whether the effects of passion for work were independent from those of work motivation.

**Design/methodology/approach** – Hypotheses were tested in two field studies in work settings. The first study ( $n = 2,393$ ) was cross-sectional while the second study ( $n = 335$ ) used a prospective design.

**Findings** – Harmonious passion was positively related to positive individual outcomes – higher work satisfaction, lower depression – and organizational outcomes – lower turnover intentions. Negative consequences – depression and turnover intentions – were positively related to obsessive passion. Furthermore, passion for work was found to be a distinct concept from work motivation as the above findings held even when controlling for work motivation.

**Research limitations/implications** – Applications are limited to teachers. Only self-reported measures were used.

**Originality/value** – The present research contributes significantly to the organizational and passion literature by showing that HWI may lead to either positive or negative outcomes depending on HWI's underlying motivational force, namely harmonious or obsessive passion. In addition, the present findings yield the first empirical evidence that passion and motivation are distinct but related concepts. In sum, findings from both studies provide valuable insights into the dynamics of passionate workers who are heavily invested in their work.

**Keywords** Motivation, Turnover intentions, Depression, Heavy work investment, Passion for work, Work satisfaction

**Paper type** Research paper

How much time and energy workers invest in their job depends on numerous factors. Some may need the extra money, a few might be addicted to work, and others may want to impress their employers and have a better chance for a promotion (Ng *et al.*, 2007). Still, some workers invest a considerable amount of time and effort in their job simply because they love what they do. Yet, all share a common point: their behavior expresses a form of heavy work investment (HWI).

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In order to integrate existing research on HWI, Snir and Harpaz (2011) have proposed a model. Accordingly, two core dimensions delineate HWI, namely time (i.e. frequency) and effort (i.e. intensity) investments in work. Hence, heavy work investors spend not only a considerable amount of time working, they also put in a significant amount of physical or mental energy. Snir and Harpaz further propose two major types of HWI: situational and dispositional types. Situational types of HWI are for example, financially-based or employer-directed. For instance, workers can display HWI when they have great financial needs and the additional time and effort invested at work will give them extra pay. Or, certain job designs (e.g. emergency rooms doctors) impose HWI. These forms of HWI emerge from specific external predictors (financial needs, employer demands or organizational culture), and thus when these predictors are no longer present, the model proposes that situational investors will reduce their investment (Snir and Harpaz, 2011).

According to the HWI model, the dispositional forms of HWI are related to more internal predictors, such as addiction to work and passion for work. Snir and Harpaz (2011) propose at least two subtypes of dispositional HWI: workaholism and work-devotion. Workaholism emerges from an addiction to work (Snir and Harpaz, 2011), whereas work-devotion is “an expression of passion for work” (Snir and Harpaz, 2011, p. 5). Since these forms of HWI are related to internal dispositions, the model stipulates that dispositional investors will display a steady HWI, contrary to their situational counterparts. In addition, dispositional investors are thought to have stronger affective reactions to work-related events than situational investors (Snir and Harpaz, 2011).

Hence, depending on the subtype, HWI can lead to positive, negative or mixed outcomes for the individual, the organization and the worker’s family or entourage. For instance, many studies have established a relationship between workaholism and burnout (Schaufeli *et al.*, 2008), work-life conflict (Bonebright *et al.*, 2000), and stress (Spence and Robbins, 1992). However, fewer studies have investigated the relationships of other types of HWI with well-being. Thus, the relationship between HWI and psychological well-being needs to be clarified. Specifically, can HWI lead to positive and/or negative outcomes? At the present moment, this question is in need of a definitive answer and we think that the concept of passion for work can help clarify this issue.

This paper had three main objectives. The first was to position passion for work as a source of HWI. More specifically, can HWI be ascribed to passion for work? The second was to clarify the relationship between HWI and workers’ outcomes. More specifically, we aimed to show that HWI does not always lead to deleterious effects on workers’ psychological well-being and is not always related to higher retention. HWI can promote positive psychological health and protect against psychological distress, lead to retention or turnover depending on which type of passion fuels one’s investment. Finally, the present paper aimed to distinguish passion for work from a similar, yet distinct concept, namely motivation at work.

### **On the concept of passion**

#### *The dualistic model of passion*

The dualistic model of passion (Vallerand *et al.*, 2003; Vallerand and Houlfort, 2003) defines passion as a strong inclination toward an activity that we love, in which we

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invest a significant amount of time and energy, that we find important, and that defines us. In addition, the dualistic model of passion proposes that two types of passion exist: harmonious and obsessive passion. Harmonious passion emerges from an autonomous internalization process, one in which individuals freely choose to pursue their passionate activity because they love it, find it important, and because it represents who they are. With harmonious passion, individuals are not pressured into this activity, and do not find themselves compelled to engage in it. Workers with a harmonious passion invest a significant but flexible amount of time and energy in their job. For instance, elementary school teachers with a harmonious passion invest more than the 32 weekly hours, for which they are paid. So they will grade their pupils' exams at home, during the evening, they will perhaps take an additional class on Friday, prepare new material during the weekends, meet with parents after class and provide help to students who need it during lunchtime. However, their investment is flexible, such that they will move around their work schedule to let other non-work activities have their place and be enacted. Importantly, because workers with a harmonious passion do not feel compelled to indulge in their job, they will feel good about investing time and energy in their work and taking time for their non-work activities. And because time spent doing other activities beside work allows them to relax, get revitalized, and be nourished in a different way, they tend to protect these moments. Thus, the passionate activity is in harmony with other aspects of the person's life and does not control the individual (Vallerand *et al.*, 2003).

Obsessive passion takes place when the passionate activity was internalized in a controlled way. External or internal pressures to "take in" the activity and make it one's own characterize the controlled internalization process. Consequently, the activity becomes ego contingent, and individual with such a passion are considered to have fragile ego (Lafrenière *et al.*, 2011). Workers with an obsessive passion love their job, find it important, invest a considerable amount of time and effort in it, and define themselves by it – just as their counterparts with a harmonious passion – but they need to engage in their work to feel good about themselves and avoid feeling guilty. Such passion leads to a rigid form of HWI. For example, teachers with an obsessive passion might accept to tutor kids at lunchtime and after school, or participate in a parent-teacher committee, although such tasks would overburden them and prevent them from spending time with their family and friends. During and after tutoring they might feel guilty because they did not spend that time with their loved ones. The negative affect as well as the rumination emerging from such situation can distract them from the task at hand (Vallerand *et al.*, 2003).

Much empirical support has been obtained for the dualistic model of passion. For instance, exploratory and confirmatory factor analyses with the passion scale have supported the existence of two constructs, namely harmonious and obsessive passions (e.g. Rousseau *et al.*, 2002; Vallerand *et al.*, 2003; Vallerand *et al.*, 2006). The construct validity of the two types of passion has also received empirical support. Both harmonious and obsessive passions have been found to be positively related with activity liking and valuation, behavioral investment in the activity, endorsement of the activity within the self, and measures of the activity being perceived as a passion, while being differently related to different types of outcomes (see Vallerand, 2010 for a review). Typically, harmonious passion promotes, while obsessive passion

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undermines, positive cognitive, affective, behavioral, and interpersonal outcomes (Vallerand, 2010).

The concept of passion has generated some interest in the work context (see Vallerand *et al.*, n.d., for a review). Past research has shown that passionate workers are assets for organizations (Baum and Locke, 2004; Cardon *et al.*, 2009; Chen *et al.*, 2009) as they significantly help increase venture performance and capitalists' investment, as well as effectiveness. Passionate entrepreneurs are found to expend increase effort, be more persistent and experience higher levels of enthusiasm (Cardon *et al.*, 2005).

Recently, Liu *et al.* (2011) showed that harmonious passion for work was positively related to job creativity. Harmonious passion for work is also related to flow, psychological well-being, decreases in work-family conflicts, and work satisfaction (Carbonneau *et al.*, 2008; Vallerand *et al.*, 2010). Harmonious passion also has a positive influence on relationships' quality in the workplace (Philippe *et al.*, 2010). Carbonneau *et al.* (2008) found that harmonious passion for teaching was positively related to work satisfaction and positive student behaviors over a period of three months. Conversely, harmonious passion was negatively associated with burnout. Examining the psychological mechanisms involved in the passion-psychological well-being relationship, Philippe *et al.* (2010) found support for the mediating role of positive emotions. Based on the broaden-and-build theory of positive emotions (Fredrickson, 2001; Fredrickson and Branigan, 2005), it was suggested that workers with a harmonious passion fuel up on positive emotions, which lead them to increase their psychological resources. When faced with challenges or obstacles, workers can draw from their resources to overcome their difficulties and still experience psychological health.

Workers with an obsessive passion tend to experience fewer positive outcomes. For instance, obsessive passion for work is positively related to psychological distress (Forest *et al.*, 2011; Vallerand and Houliort, 2003), burnout (e.g. Carbonneau *et al.*, 2008; Vallerand *et al.*, 2010), and work-family conflict (e.g. Vallerand *et al.*, 2010). Philippe *et al.* (2010) also found that workers with an obsessive passion experienced more negative emotions that, in turn, were related to negative relationships with colleagues.

Passion for work is conceived as a motivational force that leads workers to invest a significant amount of time and energy in their job and to derive important outcomes from such investment. The level and type of passion for work one has will influence the degree and quality of one's work investment that, in turn, will influence a variety of individual, interpersonal and organizational outcomes, in a negative, positive or mixed fashion. Our position on passion and HWI would appear in line with that of Snir and Harpaz (2011) who posit that passion for work is an internal predictor of HWI. What we add, however, is that there are two types of passion that will determine the quality of one's HWI and ensuing consequences.

#### *On passion and motivation*

Passion and motivation would appear to be similar constructs. Passion directs and energizes behaviors; so does motivation. Motivation leads to important cognitive, affective and behavioral consequences (see Deci and Ryan, 2000; Vallerand, 1997); so does passion (Vallerand, 2010; Vallerand and Houliort, 2003). Distinguishing passion for work from motivation at work is thus important. According to self-determination theory (SDT – Deci and Ryan, 1985, 2000), assessing human motivation merely

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according to the quantity dimension (i.e. is the individual motivated, and if so, how much?) is somewhat simplistic. For instance, highly motivated workers can be motivated for diverse reasons. SDT stipulates that the underlying regulation of the behavior will influence differently individual and organizational outcomes (Deci and Ryan, 2000; Gagné and Deci, 2005). Hence, according to SDT there are three different types of motivation (amotivation, extrinsic, and intrinsic), which fall along a continuum anchored by control and autonomous regulation.

Behaviors that are intrinsically regulated or have an identified or integrated regulation (two regulations type representing two forms of extrinsic motivation) represent an autonomous motivation. Autonomous regulation is a self-regulated process to engage in a behavior: individuals put effort in their work because they enjoy it, find it interesting, or because they have chosen to do so. Behavioral regulation underlying a controlled motivation (external and introjected regulations) emerges from external or internal pressure: for instance, individuals put effort in their work to have a bigger bonus or because they would feel guilty if they did not. The activity is not internalized in the person's identity, "people's behavior is regulated by others' administration of contingencies" (Deci and Ryan, 2000, p. 236). However, recent findings suggest that an autonomously motivating activity is not usually fully internalized in the person's identity (Vallerand and Miquelon, 2007). In addition, having an autonomous motivation for an activity does not guaranty a substantial investment of one's time and energy into it. Research in the sport domain (e.g. Vallerand *et al.*, 2003, Study 2; Vallerand and Miquelon, 2007) has provided compelling evidence that controlling for both controlled and autonomous forms of motivation, harmonious and obsessive passion still predicted affective outcomes to the same degree as usual, while motivation had a weaker contribution. More recently, Gousse-Lessard and Vallerand (2011) revealed that harmonious passion for the environmental cause predicted pro-environmental behaviors (e.g. buying "green", recycling and partake in peaceful manifestation) over and beyond autonomous and controlled motivation for the cause. One purpose of this research was thus to further test the independent contribution of the passion concept in the work domain over and beyond that of motivation.

### Overview of study 1 and hypotheses

Organizations are concerned with employees' psychological well-being and, as stated earlier, the role of HWI in workers' psychological health is not clear. We sought to clarify the contribution of HWI in workers' outcomes by using the concept of passion. We conducted a field study with workers who are known for their HWI, namely teachers (Day, 2004). The short-term influence of passion – harmonious and obsessive – on work satisfaction and depression was assessed. In addition, the distinctions and similarities between passion and motivation at work were examined. Thus:

- H1a.* Harmonious passion will be positively related to work satisfaction and negatively related to depression.
- H1b.* Obsessive passion will be negatively related to work satisfaction and positively related to depression.
- H2.* Harmonious and obsessive passion for work will predict individual and organizational outcomes over and beyond autonomous and controlled motivation at work.

## Methodology

### *Participants and procedure*

Participants were 2,393 teacher (523 males and 1,870 females) aged between 22 and 68 years ( $M = 40.79$  years,  $SD = 9.66$  years). Teachers in Quebec are paid for 32 hours per week. However, in our sample, the average hours per week worked are 37.6 ( $SD = 4.01$ ). Specifically, 40.9 percent of our sample worked more than 39 hours per week, and less than 7 percent worked fewer than 32 hours. The range of years of experience in teaching varied from 0 to 46 years ( $M = 14.04$  years,  $SD = 8.49$  years). Participants taught at various education level: 8.4 percent preschool, 35 percent elementary, 33.5 percent high school, 3.8 percent adult education, 4.1 percent vocational education, and 15.2 percent special education.

With the collaboration of a major teacher union, questionnaires were sent to 17,000 teachers, through the schools internal mail system. Participants were asked to complete the questionnaire and return it directly to the research team via a pre-stamped envelope. The return rate was 14.07 percent. A survey sent by the union was also being distributed at the time when the study was done which can partly explain the relatively low return rate.

### *Measures*

*Passion for work.* The passion scale for work (Vallerand and Houliort, 2003) was used in order to assess teachers' passion for their work. The passion scale is divided in two subscales of six items each; the obsessive and the harmonious subscales. A sample item for the harmonious subscale is "My work is in harmony with other activities in my life" and for the obsessive subscale is "I have difficulties controlling my urge to work". The original passion scale and many of its derivatives have been shown to display high levels of validity and reliability (Rousseau *et al.*, 2002; Vallerand *et al.*, 2003; Vallerand and Houliort, 2003; Vallerand *et al.*, 2006). In the present study both subscales had good internal consistency (harmonious passion:  $\alpha = 0.87$ , obsessive passion:  $\alpha = 0.75$ ). All items were scored on seven-point Likert scale, ranging from 1 (do not agree at all) to 7 (very strongly agree).

*Work motivation.* Items from the motivation at work scale (Gagné *et al.*, 2011) were used to assess teachers' motivation for teaching. Following a procedure used by Williams *et al.* (1996), we created an autonomous and controlled motivation index by summing items from the intrinsic and identified motivation subscales – autonomous motivation index ( $\alpha: 0.94$ ) – and summing the items from the extrinsic and introjected motivation subscales – controlled motivation index ( $\alpha: 0.82$ )[1]. Items were answered on a scale ranging from 1 (not at all) to 7 (exactly).

*Work satisfaction.* This scale contains five items ( $\alpha: 0.86$ ) and has been modified from the satisfaction with life scale (Diener *et al.*, 1985) to fit the work domain. A sample item is "The conditions in which I do my work are excellent". Items were scored on scale, ranging from 1 (do not agree at all) to 7 (very strongly agree).

*Depression.* Five items ( $\alpha: 0.84$ ) from the depression subscale from Ilfeld's (1976) psychiatric symptoms index were used. The questionnaire assess the frequency of depressive symptoms – the stem is "Over the last week, how often [...]" – and a sample item is "did you feel desperate when thinking about the future?". Answers were rated on a scale from 1 (never) to 4 (often).

Sex, tenure, and number of hours worked per week were used as control variables.

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## Results

### *Preliminary analysis*

Table I provides the means, standard deviations, and correlations among all study variables. Given that harmonious passion was at least moderately positively and negatively correlated with autonomous and controlled motivation, respectively, we conducted a CFA to examine the empirical distinction existing among these constructs. Obsessive passion was not included in this preliminary CFA, because it was not correlated with harmonious passion and only weakly correlated with autonomous and controlled motivation. An initial three-factor model CFA was conducted, allowing each indicator of each construct to load separately on their respective latent variable (autonomous motivation, controlled motivation, and harmonious passion). Fit indices for this model were adequate: SB  $\chi^2$  (df = 24) = 389.85,  $p < 0.001$ , NNFI = 0.97, CFI = 0.95, RMSEA = 0.080 [0.073; 0.087], SRMR = 0.065, AIC = 431.85.

A second CFA was conducted, this time allowing the indicators of harmonious passion and autonomous motivation to load on the same latent variable within a two-factor model. Results revealed poorer fit indices for this model: SB  $\chi^2$  (df = 26) = 637.79,  $p < 0.001$ , NNFI = 0.96, CFI = 0.95, RMSEA = 0.099 [0.093; 0.11], SRMR = 0.072, AIC = 675.79. Notably, the AIC criterion was considerably higher for this latter alternative model, thus suggesting that the original three-factor model should be preferred. Another alternative two-factor model was tested wherein the indicators of harmonious passion and controlled motivation were allowed to load on the same latent variable (expecting negative loadings for the controlled motivation indicators). Results for this alternative model also revealed unsatisfactory fit indices as compared to the original model, SB  $\chi^2$  (df = 26) = 609.70,  $p < 0.001$ , NNFI = 0.96, CFI = 0.97, RMSEA = 0.097 [0.093; 0.104], SRMR = 0.078, AIC = 647.70. Finally, a test of a one-factor model also revealed poor fit indices, SB  $\chi^2$  (df = 27) = 804.85,  $p < 0.001$ , AIC = 840.85. Overall, these preliminary analyses suggest that passion and motivation are correlated, but constitute independent constructs.

### *Main analysis*

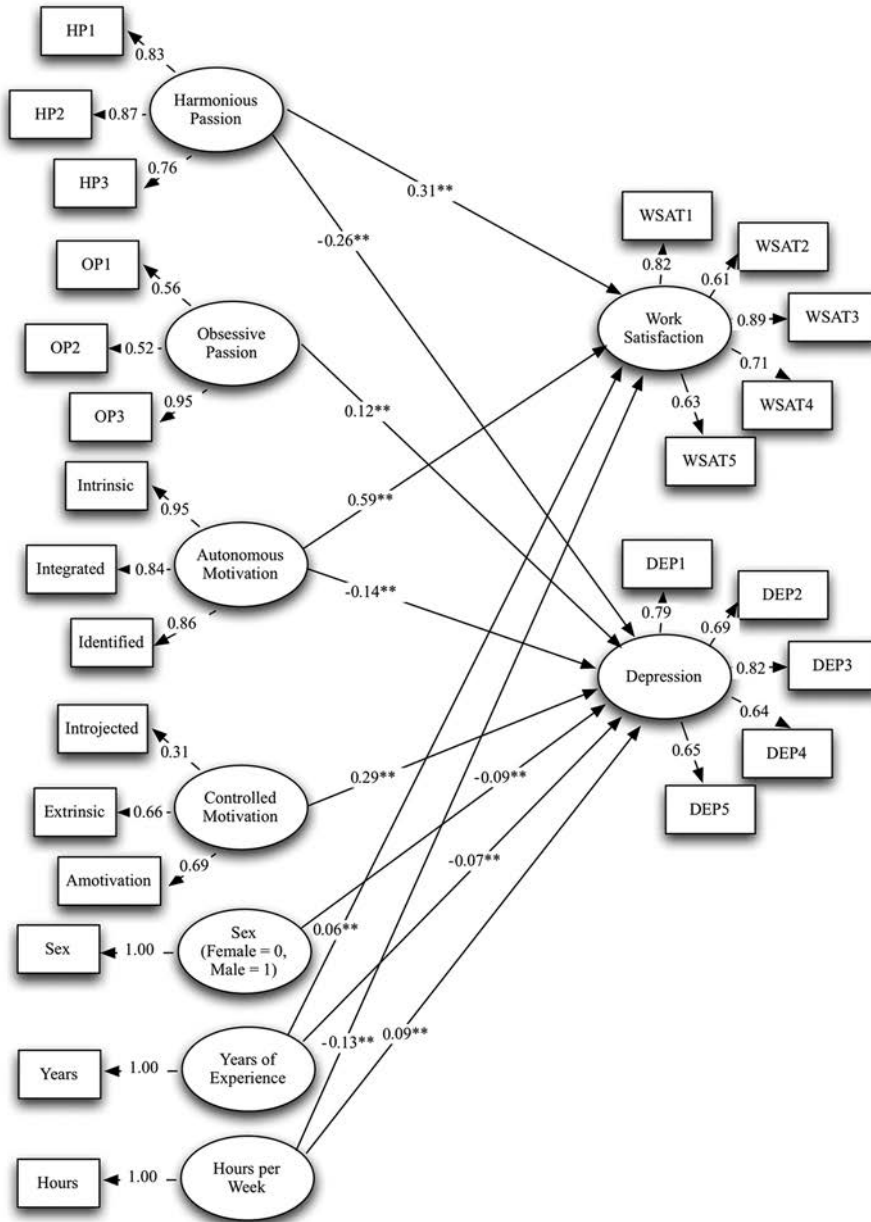
A structural equation model was used to examine the relationships between passion and work satisfaction and depression. The model was conducted in LISREL 8 (Jöreskog and Sörbom, 2003) and robust maximum likelihood was the method of estimation. Observed variables were computed using item parceling for the passion and motivation constructs (Bandalos, 2002). A covariance was drawn between work satisfaction and depression. In addition, we also controlled for the effect of sex, tenure, and weekly hours worked. Test of this model (see Figure 1) revealed acceptable fit indices, SB  $\chi^2$  (df = 242) = 4,158.38,  $p < 0.001$ , NNFI = 0.94, CFI = 0.95, RMSEA = 0.082 [0.080; 0.085], SRMR = 0.092. In addition, all factor loadings were significant and adequately high. Results revealed that harmonious passion was negatively associated with depression and positively associated with work satisfaction. Conversely, obsessive passion was positively associated with depression, but unrelated to work satisfaction. Autonomous motivation was negatively and positively associated with depression and work satisfaction, respectively, whereas controlled motivation was positively associated with depression and unrelated to work satisfaction. All these results held after

**Table I.**  
Means, standard  
deviations, and  
correlations: study 1

	Means	SD	1	2	3	4	5	6	7	8
Harmonious passion (1)	5.01	1.09	–							
Obsessive passion (2)	2.20	0.98	–0.03	–						
Autonomous motivation (3)	5.27	1.02	0.75**	0.11**	–					
Controlled motivation (4)	2.19	0.62	–0.33**	0.26**	–0.35**	–				
Sex (5)	–	–	–0.06**	–0.03	–0.06**	0.05*	–			
Years of experience (6)	14.04	8.49	–0.10**	–0.00	–0.00	–0.03	0.04	–		
Hours per week (7)	37.60	4.01	–0.09**	0.25**	–0.09**	0.16**	–0.18**	–0.19**	–	
Depression (8)	1.85	0.68	–0.46**	0.17**	–0.45**	0.40**	0.02	–0.01	0.20**	–
Work satisfaction (9)	4.30	1.21	0.66**	0.03	0.69**	–0.29**	–0.04*	0.04	–0.20**	–0.51**

**Notes:** \*  $p < 0.05$ ; \*\*  $p < 0.01$





**Notes:** Controlled variables are autonomous and controlled motivation, sex, years of experience, and the number of weekly hours worked. Non-significant paths are not shown for the sake of clarity. \* $p < 0.05$ ; \*\* $p < 0.01$

**Figure 1.** Structural equation model of the relationships between passion and work satisfaction and depression

controlling for gender, tenure, and weekly hours worked. Overall, these results suggest that passion and motivation constitute two related but distinct constructs.

Results from study 1 show that being a heavy work investor does not invariably lead to individual negative outcomes. Such effects depend on the type of passion underlying one's HWI. Specifically, harmonious passion's positive association with work satisfaction and negative association with depression suggest that HWI can lead to positive consequences. Conversely, when obsessive passion is at play, negative consequences are experienced such as depression. Thus, the results from study 1 suggest a tentative resolution to the question posed in the introduction regarding the impact of HWI on workers' outcomes.

### Study 2

The results of study 1 revealed that the impact of one's HWI depends on its source, namely if the passion for one's work is harmonious or obsessive. A first goal of study 2 was to attempt to replicate the findings of study 1 with respect to depression and work satisfaction using a prospective design. Such a design should allow us to test if passion can predict changes in outcomes. A second purpose of study 2 was to extend those findings to other outcomes. Retention is an important organizational issue (Hollenbeck and Williams, 1986; Waldman *et al.*, 2004), especially within schools. In Canada, 20 percent of young teachers quit before making it to their five-year anniversary in the profession (Grimmett and Echols, 2000) (Table II).

Turnover intentions reflect how workers foresee their employment (Bright, 2008) and commitment to their work, organization, or profession. According to Fishbein and Ajzen's (1975) theory of attitude, turnover intentions usually precede the actual behavior of quitting one's work. Acting on factors that can reduce turnover intentions should thus lower employees' attrition rate, and the costs associated with it. Work satisfaction is an important determinant of turnover intentions (see Hom *et al.*, 1992): it is negatively related to turnover intentions and actual turnover (e.g. Griffeth *et al.*, 2000; Tett and Meyer, 1993; Zimmerman and Darnold, 2009).

Another important variable in the prevention of turnover intention is psychological well-being (e.g. Burke and Greenglass, 1989; Schwab *et al.*, 1986). Carson *et al.* (2010) reported that emotional exhaustion was positively related to attrition rate among early childhood teachers. These findings could mean that workers who are experiencing psychological distress consider quitting one's job as way of coping (Bellavia and Frone, 2005). Thus, workers who frequently experience depressive symptoms should have higher levels of turnover intentions. Since previous findings suggest that obsessive passion is related to high psychological distress (see Vallerand, 2010), obsessive passion should be positively related to turnover intentions.

Finally, study 2 sought to further assess the difference in the long-term influence of passion and motivation on workers' outcomes. Although motivation for work can have a short-term impact, passion should have a longer lasting influence on outcomes because with passion, work is part of the workers' identity. Thus:

*H3a.* Harmonious passion at time 1 will positively predict increases in work satisfaction at time 2.

*H3b.* Harmonious passion at time 1 will predict decreases in depression and turnover intentions at time 2.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
Harmonious passion (1)	4.98	1.08	-											
Obsessive passion (2)	2.11	0.93	0.02	-										
Autonomous motivation(3)	5.20	1.08	0.77**	0.16**	-									
Controlled motivation (4)	2.20	0.68	-0.27**	0.18**	-0.37**	-								
Sex (5)	-	-	-0.04	0.05	-0.06	0.07	-							
Years of experience (6)	12.78	7.81	-0.04	-0.04	0.05	-0.06	-0.02	-						
Hours per week (7)	37.74	7.43	-0.06	0.11*	-0.02	0.08	-0.07	-0.08	-					
Depression time 1 (8)	1.90	0.68	-0.43**	0.19**	-0.44**	0.40**	0.02	-0.10	0.10	-				
Work satisfaction time 1 (9)	4.25	1.24	0.67**	0.05	0.65**	-0.26**	-0.01	0.03	-0.09	-0.42**	-			
Depression time 2 (10)	1.72	0.55	-0.25**	0.18**	-0.27**	0.22**	0.07	-0.10	0.10	0.33**	-0.24**	-		
Work satisfaction time 2 (11)	4.28	1.14	0.53**	-0.02	0.48**	-0.21**	-0.07	0.08	-0.13*	-0.36**	0.59**	-0.43**	-	
Intentions to quit time 1 (12)	0.07	0.26	-0.20**	0.08	-0.24**	0.21**	0.03	0.16**	-0.16**	0.18**	-0.20**	0.21**	-0.20**	-
Intentions to quit time 2 (13)	0.44	0.50	-0.33**	0.11*	-0.29**	0.16**	0.12*	-0.05	0.03	0.34**	-0.35**	0.36**	-0.47**	0.19**

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$

**Table II.**  
Means, standard deviations, and correlations: study 2

- H3c.* Obsessive passion at time 1 will predict increases in depression and turnover intentions at time 2.
- H3d.* Depression and work satisfaction will mediate the relationship between passion and turnover intentions.
- H4.* Passion should have more important effects on outcomes over time than motivation.

## Methodology

### *Participants and procedure*

Participants were 335 teachers (77 males and 258 females) aged between 23 and 63 years ( $M = 39.39$  years,  $SD = 9.48$  years) who completed two questionnaires over a two-year period. The range of years of experience in teaching varied from 1 to 38 years ( $M = 12.78$  years,  $SD = 7.81$  years). These educators reported working for an average of 37.74 hours per week ( $SD = 7.43$  hours). Preschool (8.5 percent), elementary school (40.7 percent), high school (23.6 percent), vocational education (5.4 percent), adult education (2.3 percent), and special education (13 percent) level teachers were represented in our sample.

With the collaboration of a teacher union, questionnaires at time 1 were sent directly to teachers through the schools' internal mail system. Participants were invited to partake in a longitudinal study on teachers' psychological well-being. The second wave took place two years later. An e-mail invitation to complete a web-based questionnaire was sent to educators that had given a valid email address. A total of 800 completed and returned the questionnaire time 1. From those, 335 completed and returned the questionnaire time 2 (41.88 percent return rate).

### *Measures*

*Passion for work time 1.* The same scales as in study 1 was used. Internal consistency for both harmonious ( $\alpha = 0.87$ ) and obsessive ( $\alpha = 0.74$ ) passion was good.

*Motivation at work time 1.* The same scale as in study 1 was used, with good internal consistency ( $\alpha = 0.93$ ).

*Depression time 1 and time 2.* The same scales as in study 1 were used. The scale revealed good internal consistency at both time (time 1:  $\alpha = 0.85$ ; time 2:  $\alpha = 0.79$ ).

*Work satisfaction time 1 and time 2.* The same scales as in study 1 were used. Internal consistency was good at both times (time 1:  $\alpha = 0.87$ ; time 2:  $\alpha = 0.86$ ).

*Intentions to quit at time 1 and time 2.* We asked teachers to indicate how much time they intended to stay within the profession. The answers were dichotomized; 1 = less than 2 years; 2 = more than two years.

Sex, tenure and number of hours worked per week were used as control variables.

## Results

It was hypothesized that the two types of passion (controlling for autonomous and controlled motivation) would be associated with changes in work satisfaction, depression, and intentions to quit. To examine these hypotheses, a structural equation model was conducted using weighted least squares as the method of estimation. This method of estimation handles dichotomous endogenous variables (i.e. intentions to quit at time 2) by estimating probit coefficients. The two types of passion were thus

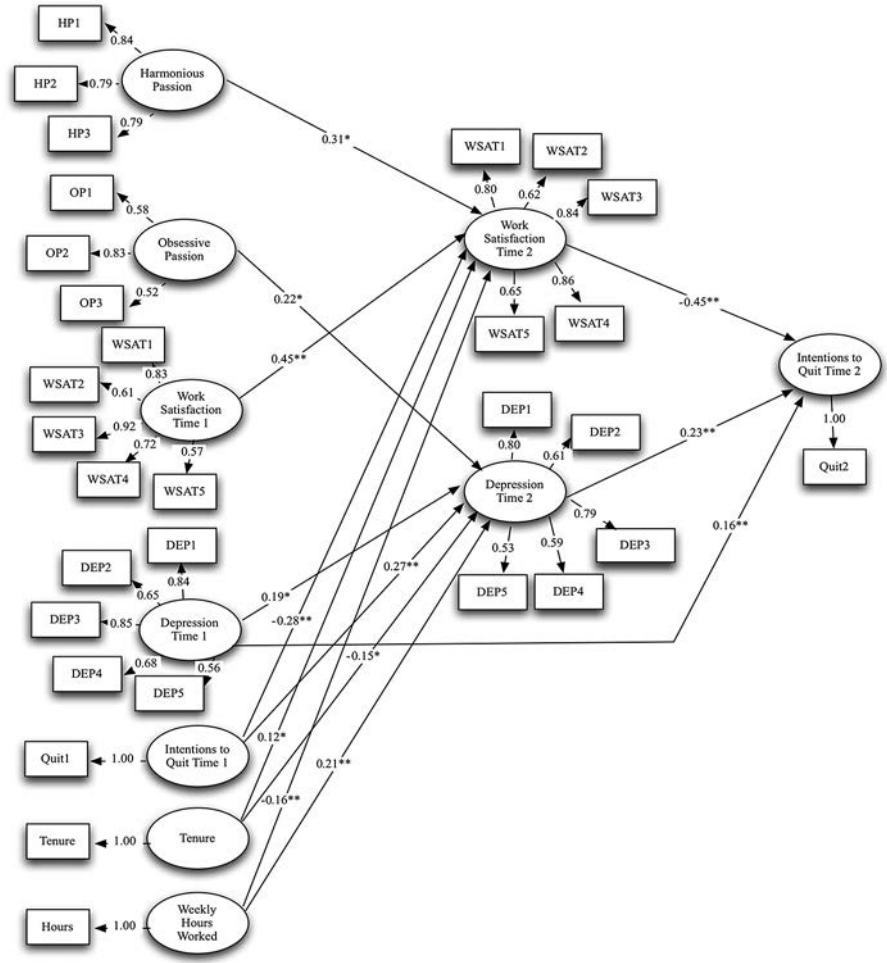
modeled to predict work satisfaction, depression, and intentions to quit measured at time 2. The covariances among these three time 2 measures were also freely estimated. Controlled variables were work satisfaction, depression, and intentions to quit at time 1, sex, years of experience, and weekly hours worked. A path was drawn from each of these controlled variables to all three time 2 measures.

The fit indices of this model were adequate  $\chi^2$  ( $df = 556$ ) = 1,433.74,  $p < 0.001$ , NNFI = 0.94, CFI = 0.95, RMSEA = 0.069 [0.064; 0.073], SRMR = 0.071. Results revealed that harmonious passion predicted increases in work satisfaction ( $\gamma = 0.31$ ,  $p < 0.05$ ), but not in depression ( $\gamma = 0.09$ , ns). Conversely, obsessive passion predicted increases in depression ( $\gamma = 0.22$ ,  $p < 0.05$ ), but not in work satisfaction ( $\gamma = 0.03$ , ns). However, harmonious and obsessive passion did not directly predict increases in intentions to quit ( $z$ s < |1.12|, ns). Autonomous and controlled motivations were not correlated with any of these outcomes (all  $z$ s < |1.40|, ns). Years of experience predicted increases in work satisfaction and decreases in depression, whereas intentions to quit at time 1 and weekly hours worked predicted decreases in work satisfaction and increases in depression. All other paths were non-significant, with the exceptions of work satisfaction and depression at time 1, which were significantly correlated with their respective time 2 measure. Depression at time 1 also predicted increases in intentions to quit. Further analyses using Sobel tests revealed that work satisfaction at Time 2 was mediating the relationship between harmonious passion and intention to quit at time 2 ( $z = 2.09$ ,  $p < 0.05$ ) and that depression at time 2 was marginally mediating the relationship between obsessive passion and intention to quit at time 2 ( $z = 1.92$ ,  $p = 0.054$ ). This final model is shown in Figure 2.

In sum, these findings provided additional support for the main hypothesis to the effect that heavy work investors fuelled by passion can experience positive or negative consequences, depending on the type of passion one has for his or her work. Furthermore these findings were obtained over a two-year period. Specifically, harmonious passion for work was found to predict adaptive outcomes (increases in work satisfaction but no changes in depression) while obsessive passion predicted less adaptive consequences (increases in workers' depression, but no effects on work satisfaction). The absence of a significant relationship between obsessive passion and changes in work satisfaction was reported elsewhere as well (e.g. Carbonneau *et al.*, 2008; Vallerand *et al.*, 2010) and provides further evidence to the effect that obsessive passion leads to less positive work outcomes than harmonious passion. Results also show that passion can have long-lasting influences on turnover intentions, which are mediated by workers' satisfaction and depression. Finally, the distinction between passion for work and work motivation was also confirmed in study 2 as the above findings held even when controlling for work motivation.

### General discussion

Past research had underscored the fact that HWI has an ambiguous relationship with outcomes. The present research sheds some light on this issue by conceptualizing passion for work as a source of HWI and considering both forms of passion: harmonious and obsessive. Distinguishing harmonious from obsessive passion provides a better prediction of the outcomes among a group of heavily invested workers such as teachers. Findings from the present studies show that harmonious passion leads to positive outcomes, whereas obsessive passion leads to negative



**Figure 2.** Structural equation model of the relationships between passion and changes in work satisfaction, depression, and intentions to quit over one year

**Notes:** Autonomous and controlled motivation, sex, covariances, and non-significant paths are not shown for the sake of clarity. \* $p < 0.05$ ; \*\* $p < 0.01$

outcomes. Specifically, harmonious passion was positively related to short-term and long-term increases in work satisfaction and negatively related to short-term depression. Study 2 confirmed the prolonged influence of passion on such outcomes, especially work satisfaction. Thus, HWI can have benefits for workers, both short-term and long-term, to the extent that harmonious passion is at play. However, adverse effects will emerge if obsessive passion underlies HWI. Indeed, results from both studies revealed that obsessive passion was positively related to short and long-term increases in depression. Research reveals that when obsessive passion underlies one's investment in an activity, positive emotions are thwarted by such a form of HWI (Philippe *et al.*, 2010), and because obsessive passion nurtures work-family conflicts

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(Vallerand *et al.*, 2010), workers with an obsessive passion are more at risk for depression.

#### *On HWI, passion and turnover intentions*

Turnover intentions are related to important costs for organizations (e.g. Waldman *et al.*, 2004). Although we can argue that a certain proportion of turnover is functional and thus desired, excessive turnover is detrimental to organizational performance (Abelson and Baysinger, 1984; Glebbeek and Hax, 2004). Thus, to avoid dysfunctional turnover, organizations need to understand the underlying causes, elaborate policies to counteract unwarranted turnover, and perhaps hire employees predisposed to stay with the organization. HWI can be perceived as a dispositional barrier to turnover, and organizations may be inclined to hire candidates who are heavy work investors. Results from study 2 suggest that such hiring strategies need to be carefully applied as not all HWI leads to retention. Results revealed a marginal mediation between obsessive passion and turnover intentions by depression. In other words, among heavily invested teachers, obsessive passion was indirectly related to increases in turnover intentions over a two-year period, through its relationship with depression. In other words, HWI can lead to turnover intentions, if obsessive passion is fuelling HWI.

These findings are of particular importance for the field. The DMP (Vallerand *et al.*, 2003) predicts a rigid investment from workers with an obsessive passion. In other words, according to the DMP, workers with an obsessive passion should demonstrate persistent ill-advised behaviors towards their job. Previous research on turnover determinants show, however, that psychological distress is positively related to turnover (e.g. Carson *et al.*, 2010; Kim and Stoner, 2008), supporting the present findings. Perhaps persistent ill-advised behaviors in the educational context lead to additional harmful consequences such as parents' and students' complaints, which in turn can lead to administrative interventions (e.g. sanctions). Being the target of sanctions may have an adverse effect on the ego, which defeats the purpose of the passionate activity: protecting the ego. Future research is needed to clarify this issue. However, we believe that long-lasting threats to the ego may generate intentions to leave one's work in individuals who have a more fragile ego, like workers with an obsessive passion.

Harmonious passion for work was negatively related to turnover intentions, and this relationship was mediated by work satisfaction. Consistent with the DMP, workers with harmonious passion seem to experience higher levels of work satisfaction, and consistent with research on turnover determinants, work satisfaction was negatively related to turnover intentions. Thus, as long as the harmonious worker is satisfied, he or she will remain with the organization. However, when work is no longer a satisfactory experience, harmonious workers may be determined to leave.

#### *On passion and motivation*

Passion for work and motivation at work are different, yet related constructs. Both concepts are hypothesized to energize and direct behavior and both are expected to have affective, cognitive, and behavioral consequences. Nonetheless, findings from the present studies provide strong evidence that passion for work and motivation at work are not identical. Perhaps the most straightforward confirmation of this conclusion is that when controlling for motivation the effects of passion on outcomes remain.

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Furthermore, the findings in study 2 lead to a second conclusion: passion predicts long-term work satisfaction and depression, whereas motivation does not. When both concepts are entered simultaneously in a model, it seems that passion for work is better at predicting long-term consequences than work motivation. This is not to say that motivation at work is irrelevant, but rather that passion for work seems to capture a unique phenomenological experience where one's passion for work remains in identity over the long-term, thereby allowing researchers to predict specific consequences over time. This last finding represents a significant contribution to the passion and organizational psychology literatures. Never before was passion empirically differentiated from motivation in the work domain.

#### *Limitations and future directions*

Although the present studies yielded important findings, certain limitations need to be considered. First, only teachers were studied in the present research. Future research should include other categories of heavily invested workers to generalize the results. Second, it is also important to note that actual turnover was not assessed in the present research. Thus, future research should include a behavioral measure of turnover. The empirical distinction of passion from other HWI concepts such as workaholism (e.g. Oates, 1971; Spence and Robbins, 1992) was not conducted in the present research. Future research is therefore called for in order to clearly identify the similarities and distinctions between both concepts and their relative contribution to outcomes. Another important avenue for future research is to establish when will passion lead to HWI. In the present research, it is stated that harmonious and obsessive passions are both sources of HWI. However, in some cases, passionate workers – especially with a harmonious passion – may temporarily reduce their investment in their work to satisfy other spheres of their life. Following workers for a long period of time using diary studies or an experience sampling design could significantly contribute to our understanding of how passion fuels HWI. Finally, more research is needed to qualify the distinction between passion for work and motivation at work. Even if an empirical distinction was provided, future studies should examine more closely the phenomenological experiences of each concepts.

#### **Conclusion**

The present findings showed that not all types of HWI are equal. HWI nourished by an obsessive passion is related to depression and turnover intentions, whereas HWI fuelled by a harmonious passion is related to positive outcomes such as psychological well-being and work satisfaction. Thus, HWI can lead to positive or negative individual and organizational outcomes, depending on the type of passion underlying work investment. Future research on the role of passionate heavy work investors would thus appear promising.

#### **Note**

1. Authors of the MAWS-R (Forest, 2009, personal communication) confirmed that we could apply this procedure to their scale.



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