



From personality to passion: The role of the Big Five factors

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ABSTRACT

The present research investigated the role of the personality traits and facets of the Big Five Model in harmonious (HP) and obsessive (OP) passion. A total of 284 participants completed an online questionnaire measuring personality traits and facets, HP and OP, and positive and negative affect. Results from correlational and structural equation modeling analyses revealed that the conscientiousness, openness to experience, agreeableness, and extraversion traits (and most of their facets) were positively related to HP, while neuroticism, agreeableness, and extraversion (and most of their facets) were positively associated with OP. In turn, HP was positively related to positive affect and negatively related to negative affect. In contrast, OP was positively associated with negative affect. The results suggest that broad personality factors such as the Big Five and their facets play a role in the development of HP and OP.

Passion fosters development, as it leads people to gain new skills and to perform better in the activities they engage in. Many studies have examined the consequences of passion in a variety of life domains such as school, sports and the work environment (Vallerand, 2015). However, much less research has explored factors that facilitate the development of passion and even fewer studies have looked at the role of the personal factors in passion. The present research examines the links between the personality traits and facets of the Big Five Model (Costa & MacCrae, 1992) and passion, as defined by the Dualistic Model of Passion (Vallerand, 2015; Vallerand et al., 2003).

1. The dualistic model of passion

The Dualistic Model of Passion (DMP; Vallerand, 2015; Vallerand et al., 2003) defines passion as a strong inclination toward a self-defining activity that one loves, values and considers important, and in which one invests considerable time and energy. The DMP also distinguishes two types of passion. Harmonious passion (HP) refers to a strong yet controllable desire to engage in the activity that one loves. The passionate activity is a significant part of the person's identity but is coherent and well-integrated with other life domains. At any moment, the person can freely decide whether or not to engage in the passionate activity. In contrast, obsessive passion (OP) refers to an uncontrollable urge to engage in the activity that one loves. The person feels a pressure to continuously pursue the passionate activity. This rigid engagement can lead to neglect other aspects of one's life, thereby creating tensions

and conflicts. Moreover, when obsessively passionate, one feels ego-involved in the activity, meaning that self-esteem and self-worth fluctuate with one's performance. This leads to engage in the beloved activity with a sense of insecurity and to perceive difficulties and challenges as self-threatening.

Both HP and OP are associated with a strong commitment to the activity (Vallerand et al., 2003). However, each type of passion leads to vastly different consequences. HP is positively related to attention, concentration, and flow during activity engagement, as well as positive affect, high-quality relationships, and psychological well-being. Meanwhile, OP is positively related to negative affect, conflict, and rumination, while it is either unrelated or negatively related to concentration, positive affect, and life satisfaction (see Vallerand, 2015, for a review).

2. Personal factors related to passion

The DMP posits that the development of a passion is a function of the interaction between the activity, the environment, and the person (Vallerand, 2015). An activity is more likely to become passionate if it allows the person to satisfy basic psychological needs within a certain environment (Vallerand et al., 2003). According to Self-Determination Theory (SDT; Ryan & Deci, 2017), the three basic psychological needs are those of autonomy, competence and relatedness. Thus, if someone engages freely in an activity that allows to gain skills and feel competent and that provides opportunities to make friends and engage in

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meaningful social interactions, then this activity could become a passion (see Lalonde et al., 2017).

The social environment can also facilitate the development of a passion. Of particular interest is the level of autonomy support, that is, the extent to which the social environment recognizes one's own feelings and preferences and encourages choice and participation in decision making (Mageau et al., 2009; Vallerand, 2015). Autonomy support by the social environment, such as parents, teachers or coaches, leads people to engage freely in an activity that they value and that fits their identity, thus promoting the development of a passion. Furthermore, autonomy support, or lack thereof, is associated with the type of passion that develops. If a person already engaged in a self-defining activity feels supported in its choices by its surroundings, a HP is likely to develop. However, if the individual feels controlled and pressured to engage in one's favorite activity, the passion will most likely become obsessive (Mageau et al., 2009).

Personal factors also relate to the emergence and development of passion. According to studies by Vallerand, Rousseau, Grouzet, Dumais, and Grenier (2006) (Studies 1 and 3), individuals with an autonomous personality orientation (a general tendency to do things out of pleasure and/or choice) are more likely to develop a HP. On the other hand, when individuals have a controlled personality orientation (a tendency to do things out of external and/or inner pressure), an OP is more likely to emerge. Other studies have looked at the role of impulsivity (e.g., Orosz, Zsila, Vallerand, & Bother, 2018) and perfectionism (Verner-Filion & Vallerand, 2016) in the development of HP and OP.

Broad personality factors should also relate to passion. To this end, one of the important models is the Big Five (Costa & MacCrae, 1992). According to this model, five personality factors can explain the majority of human behaviors: neuroticism (i.e., experience of negative affect), extraversion (i.e., sociability and experience of positive affect), openness to experience (i.e., creativity and curiosity), agreeableness (i.e., friendliness and trust), and conscientiousness (i.e., organization and self-discipline). Underlying those five factors are more specific personality traits, called facets. In the only published study thus far to explore the role of the Big Five factors in passion, Balon, Lecoq, and Rimé (2013) found that HP was positively associated with conscientiousness, agreeableness, openness to experience, and extraversion. In contrast, OP was only negatively associated with agreeableness. However, the authors used the short form of the NEO Personality Inventory, which only assesses the five broad factors, and did not assess their underlying facets. We did so in the present research.

3. The present research

The present study had three goals. The first was to empirically explore the relationship between the personality traits of the Big Five Model and the two types of passion in order to attempt to replicate the findings by Balon et al. (2013). In line with the results of Balon et al. (2013), it was hypothesized that HP would be positively associated with conscientiousness, agreeableness, openness to experience, and extraversion, and would be unrelated to neuroticism, while OP would only be negatively related to agreeableness. The second goal was to assess the relationships between the 30 facets of the Big Five factors and the two types of passion. This goal is important because facets provide a more specific analysis of the Big Five than the broad, more general, factors. Because this was the first study to assess the relationship between passion and the facets, no specific hypotheses were formulated for each facet. In general, it was hypothesized that HP would correlate positively with most facets of the conscientiousness, agreeableness, openness to experience, and extraversion traits and be unrelated to the neuroticism facets. Conversely, OP was expected to be negatively correlated with most facets of agreeableness and mostly uncorrelated with the other facets. Finally, a last purpose of this study was to model the paths from the Big Five factors to the two types of passion and then to outcomes. To respect the different levels of analysis at which each

variable is located, personality was proposed to influence passion, rather than the opposite. Indeed, personality traits reside at the dispositional level and are hypothesized to influence passion, which is more located at the contextual, activity-specific level. The outcomes assessed were positive and negative affect experienced when engaged in a passionate activity. To keep the model as parsimonious as possible only the Big Five factors (and not the facets) were used. It was hypothesized that conscientiousness, agreeableness, openness to experience, and extraversion would be positively related to HP that, in turn, would be positively associated with positive affect, and negatively related to negative affect. Conversely, it was hypothesized that agreeableness would be negatively related to OP that, in turn, would be positively related to negative, but would be unrelated to positive, affect.

4. Method

4.1. Participants and procedures

A total of 414 North American English-speaking participants completed an online questionnaire posted on the Mechanical Turk website, in exchange for monetary compensation. From this sample, 104 participants were removed based on incorrect answers to control items or because their response to a question on the nature of their favorite activity was deemed inappropriate. Nine participants were univariate outliers, with a Z-score higher than three in absolute value, on either the passion scale or the affect scale. An additional 17 participants were identified as multivariate outliers according to Mahalanobis distance (24.32, $df = 7$, $p < .001$) and were removed from further evaluations. The removal of outliers is highly recommended as it improves the accuracy of statistical estimates while reducing error rates and substantial distortions of parameters for the vast majority of analyses (Osborne & Overbay, 2008). The final sample was thus composed of 284 participants (122 males, 161 females, 1 undefined), aged from 19 to 70 years old ($M = 37.50$; $SD = 12.10$).

4.2. Measures

Personality traits and facets. Participants first completed the NEO Personality Inventory – Revised (NEO-PI-R; Costa & MacCrae, 1992), a 240-item questionnaire divided into five 48-item scales. Each scale assesses one of the five personality traits of the Big Five Model, which are each made up of six facets: Neuroticism ($\alpha = 0.95$; Anxiety, Hostility, Depression, Self-Consciousness, Impulsiveness, Vulnerability to Stress), Extraversion ($\alpha = 0.91$; Warmth, Gregariousness, Assertiveness, Activity, Excitement Seeking, Positive Emotion), Openness to Experience ($\alpha = 0.91$; Fantasy, Aesthetic, Feelings, Actions, Ideas, Values), Agreeableness ($\alpha = 0.93$; Trust, Straightforwardness, Altruism, Compliance, Modesty, Tendermindedness), and Conscientiousness ($\alpha = 0.94$; Competence, Order, Dutifulness, Achievement Striving, Self-Discipline, Deliberation). Each item is answered on a five-point scale ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”). Cronbach's alphas for the facets were satisfactory as a whole, with 26 of the 30 facets having alphas between 0.70 and 0.95. The facets with lower alphas were Compliance ($\alpha = 0.68$), Excitement seeking ($\alpha = 0.68$), Activity ($\alpha = 0.62$) and Actions ($\alpha = 0.52$).

Passion. Participants then completed the Passion Scale toward an activity that they love, that is important for them, and in which they spend a significant amount of time (Marsh et al., 2013; Vallerand et al., 2003). The factor structure of this scale has been supported in over 20 studies and the scale was found to be invariant as pertains to gender, language, age, and type of activities (for reviews see Marsh et al., 2013; Vallerand, 2015, chapter 4). The Passion Scale is composed of two six-item subscales assessing respectively HP (e.g., “This activity is in harmony with other activities in my life”; $\alpha = 0.87$) and OP (e.g., “I have difficulties controlling my urge to do this activity”; $\alpha = 0.84$). Items were rated using a scale ranging from 1 (“Do not agree at all”) to 7

Table 1
Descriptive statistics and bivariate correlations among study variables.

	M	SD	1	2	3	4	5	6	7	8
1. Neuroticism	2.70	0.60								
2. Extraversion	3.16	0.48	−0.56**							
3. Agreeableness	3.52	0.49	−0.32**	0.20**						
4. Openness	3.40	0.46	−0.33**	0.42**	0.34**					
5. Conscientiousness	3.56	0.51	−0.68**	0.40**	0.39**	0.39**				
6. Harmonious passion	5.25	1.15	−0.30**	0.35**	0.36**	0.40**	0.44**			
7. Obsessive passion	3.33	1.40	0.32**	−0.01	−0.19**	−0.13*	−0.21**	0.16**		
8. Negative affect	1.53	0.94	0.30**	−0.11	−0.40**	−0.34**	−0.42**	−0.30**	0.29**	
9. Positive affect	5.36	1.18	−0.24**	0.33**	0.33**	0.36**	−0.42	0.58**	0.10	−0.37**

(“Very strongly agree”).

Positive and negative affect. Participants' affect while engaging in their favorite activity was assessed using the two five-item subscales from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Each item refers to either positive (e.g. enthusiastic, interested; $\alpha = 0.79$) or negative (e.g. nervous, angry; $\alpha = 0.89$) affect. Items were rated using a scale ranging from 1 (“Do not agree at all”) to 7 (“Very strongly agree”).

5. Results

Three series of analyses were conducted in line with the three goals of this study: (1) correlations between the Big Five factors and the two types of passion; (2) correlations between the facets and the two passions, and; (3) a path analysis depicting the sequence from the Big Five to passion to activity outcomes. The descriptive statistics and bivariate correlations are presented in Table 1.

5.1. Correlations between the Big Five and passion

The correlations between the five personality factors and the two types of passion, as well as a comparison with the Balon et al. (2013) study are presented in Table 2. With regards to HP, our results were mostly consistent with previous findings. Specifically, HP was positively associated with conscientiousness ($r = 0.44, p < .01$), openness to experience ($r = 0.40, p < .01$), agreeableness ($r = 0.36, p < .01$), and extraversion ($r = 0.35, p < .01$). In addition, and contrary to Balon et al. (2013), neuroticism was significantly and negatively associated with HP ($r = -0.30, p < .01$). With regards to OP, our results replicated the findings of Balon et al. (2013) as pertains to agreeableness ($r = -0.19, p < .01$). However, OP was also negatively related to conscientiousness ($r = -0.21, p < .01$) and openness to experience ($r = -0.13, p < .01$), while also being positively related to neuroticism ($r = 0.32, p < .01$).

5.2. Correlations between the facets of personality and passion

As shown in Table 3, the correlations between the facets of the Big Five and the two types of passion are generally consistent with our results concerning the broader personality factor presented above.

Table 2
Correlations between the Big Five dimensions and the two types of passion in this study and the Balon et al. study.

Personality traits	Harmonious passion		Obsessive passion	
	This study	Balon et al.	This study	Balon et al.
Conscientiousness	0.44**	0.30***	−0.21**	0.04
Openness	0.40**	0.20**	−0.13**	0.08
Agreeableness	0.36**	0.23**	−0.19**	−0.19**
Neuroticism	−0.30**	−0.01	0.32**	0.11
Extraversion	0.35**	0.18*	−0.01	0.03

Indeed, most facets were correlated in line with their underlying traits with the expected passion. However, there were some notable exceptions. The following facets were not correlated with OP even though their underlying corresponding factors were (negatively): achievement striving (conscientiousness), aesthetics (openness to experience), fantasy (openness to experience), and trust (agreeableness). Additionally, the facets of actions (openness to experience) and compliance (agreeableness) were unrelated to both HP and OP.

5.3. Structural equation modeling analyses

The final analyses pertained to the model involving the Big Five factors, passion, and outcomes. Path analyses with observed variables were performed on raw data files using the maximum likelihood estimation procedure in Mplus (Muthén & Muthén, 1998–2012). The following fit indices were thus given priority in model evaluation: the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean squared residual (SRMR). According to Kline (2011), the CFI should be 0.95 or higher, while the RMSEA and SRMR should be 0.06 or lower for acceptable model fit.

Based on past research, where personality relates to passion (Balon et al., 2013) and passion relates to affect (e.g., Vallerand et al., 2003, 2006), we hypothesized a path model in which personality factors would be associated with passion that in turn would be related to positive and negative affect. In line with past research, this model also included two residual covariances (residual covariance between both types of passions ($\beta = 0.32, p < .001$) and between both types of affect ($\beta = 0.24, p < .001$). This model did not yield an adequate fit to the data, $\chi^2 (df = 13, N = 284) = 60.52, p < .001, \chi^2/df = 4.66, CFI = 0.88, RMSEA = 0.11 (0.09; 0.14), SRMR = 0.06$. Additional paths were thus included in the model based on theoretical relevance, using the Wald and Lagrange multiplier tests. Those modifications led to the addition of some direct effects (direct negative effect for conscientiousness and agreeableness on negative affect and direct positive effects for extraversion, neuroticism, and conscientiousness on positive affect). The resulting model is shown in Fig. 1. The model fits the data adequately, $\chi^2 (df = 9, N = 284) = 15.61, p = .08, \chi^2/df = 1.73, CFI = 0.98, RMSEA = 0.05 (0.00; 0.09), SRMR = 0.02$.

Results from the model revealed that conscientiousness ($\beta = 0.27, p < .001$), openness to experience ($\beta = 0.21, p < .001$), agreeableness ($\beta = 0.15, p = .008$), and extraversion ($\beta = 0.11, p = .045$) all positively related to HP. In turn, HP was positively related to positive affect ($\beta = 0.45, p < .001$) and negatively associated with negative affect ($\beta = -0.21, p < .001$). Additionally, neuroticism ($\beta = 0.32, p < .001$) and extraversion ($\beta = 0.19, p = .004$) were positively related to OP, whereas agreeableness was negatively ($\beta = -0.12, p = .04$) associated with OP. In turn, OP was positively related to negative affect ($\beta = 0.21, p < .001$). Finally, extraversion ($\beta = 0.18, p = .001$), neuroticism ($\beta = 0.14, p = .043$), and conscientiousness ($\beta = 0.22, p = .001$) were directly and significantly related to positive affect, while conscientiousness ($\beta = -0.22, p < .001$) and agreeableness ($\beta = -0.18, p = .001$) were negatively associated with negative

Table 3
Correlations between the NEO-PI R facets and both types of passions.

Traits	Facets	Mean	Standard deviation	Harmonious passion	Obsessive passion
Conscientiousness	Competence	3.75	0.62	0.50**	−0.23**
	Dutifulness	3.80	0.63	0.47**	−0.16**
	Self-discipline	3.58	0.71	0.40**	−0.18**
	Achievement striving	3.43	0.58	0.39**	−0.12
	Deliberation	3.48	0.61	0.31**	−0.17**
Openness to experience	Order	3.34	0.59	0.20**	−0.17**
	Feelings	3.57	0.63	0.47**	−0.12*
	Ideas	3.63	0.77	0.32**	−0.12*
	Aesthetics	3.32	0.76	0.29**	0.03
	Values	3.59	0.62	0.25**	−0.26**
Agreeableness	Fantasy	3.34	0.60	0.21**	0.03
	Actions	2.88	0.50	0.09	−0.10
	Altruism	3.82	0.66	0.49**	−0.14*
	Tender mindedness	3.67	0.61	0.36**	−0.15*
	Trust	3.28	0.77	0.27**	−0.10
Neuroticism	Straightforwardness	3.54	0.65	0.25**	−0.20**
	Modesty	3.49	0.68	0.13*	−0.16**
	Compliance	3.28	0.59	0.10	−0.09
	Vulnerability	2.34	0.72	−0.42**	0.24**
	Depression	2.60	0.86	−0.28**	0.21**
Extraversion	Angry/hostility	2.50	0.67	−0.27**	0.26**
	Impulsiveness	2.78	0.62	−0.23**	0.24**
	Anxiety	2.89	0.78	−0.16**	0.14*
	Self-consciousness	2.93	0.70	−0.13*	0.26**
	Warmth	3.60	0.72	0.43**	−0.06
Harmonious passion	Positive emotions	3.43	0.69	0.41**	−0.04
	Activity	3.00	0.54	0.24**	0.05
	Assertiveness	2.96	0.68	0.16**	−0.05
	Excitement-seeking	3.05	0.67	0.14*	0.04
	Gregariousness	2.85	0.73	0.13*	0.03
Obsessive passion		5.25	1.15	1	0.16**
		3.33	1.40	0.16**	1

affect.

6. Discussion

There were three major purposes to the present study: (1) empirically assess the relationship between the personality traits of the Big Five Model and the two types of passion; (2) assess the relationships between the 30 facets of the Big Five factors and the two types of passion, and; (3) model the paths from the Big Five factors to the two types of passion and then to outcomes. The findings provided general support for our hypotheses on the associations between the Big Five factors (and their facets) and the two types of passion, as well as for the hypothesized model from personality to passion to affect. These findings are discussed in turn below.

A first goal of this study was to assess the relationship between the Big Five personality traits (Costa & MacCrae, 1992) and the two types of passion as defined by the DMP (Vallerand, 2015; Vallerand et al., 2003). Balon et al. (2013) reported that HP was positively correlated with conscientiousness, extraversion, agreeableness and openness to experience, while OP was negatively correlated with agreeableness. Our findings are consistent with most of those of Balon et al. (2013), especially with regard to HP. However, there were a few notable differences. While Balon et al. (2013) only observed a significant relationship between OP and agreeableness, our results showed that all traits except for extraversion were modestly related to OP. Moreover, while neuroticism was unrelated to either types of passion in the Balon et al. (2013) study, it was negatively associated with HP and positively related to OP in this study.

These differences could be explained by at least two factors. First, the types of passionate activities differed between the two studies. Most of the participants of the Balon et al. (2013) study were people recruited from Internet forums dedicated to very specific and uncommon activities such as horseback riding and pigeon racing. Such activities

were not found in the present research. Second, Balon et al. (2013) used the short form of the NEO Personality Inventory while we used the complete inventory. Future research is necessary to more clearly determine why differences were obtained in these two studies.

A second goal of the present research was to explore the relationship between the 30 personality facets of the Big Five Model and passion. Confirming our hypotheses, all of the facets of conscientiousness and extraversion, and most of the facets of agreeableness and openness to experience were positively correlated with HP, while most of the facets of agreeableness were negatively correlated with OP. Additionally, all of the facets of neuroticism were positively correlated with OP and negatively correlated with HP. Interestingly, compliance and actions were the only facets not correlated with either HP or OP. As pertains to the action facet, the Cronbach alpha was rather low compared with the other facets (0.52), which may account for the non-significant correlation with passion. Future research is recommended to replicate the present findings.

Finally, the third goal of this research was to model the relationships between the Big Five factors, the two types of passion, and positive and negative affect. The results supported our general hypothesis. Specifically, all of the Big Five factors except neuroticism were related to HP that, in turn, was positively associated with positive affect and negatively related to negative affect. On the other hand, neuroticism and extraversion were positively related to, while agreeableness was negatively associated with OP. In turn, OP was positively related to negative affect. These findings replicate past research on the role of HP and OP in positive and negative emotions, respectively (see Vallerand, 2015 for a review). More importantly, these findings are the first, to the best of our knowledge, to show that the typical effects of the Big Five factors observed with respect to outcomes such as emotions are mediated by involvement in significant activities such as those one is passionate about. Thus, broad personality factors may produce their effects by orienting people toward passionate activities which, depending on

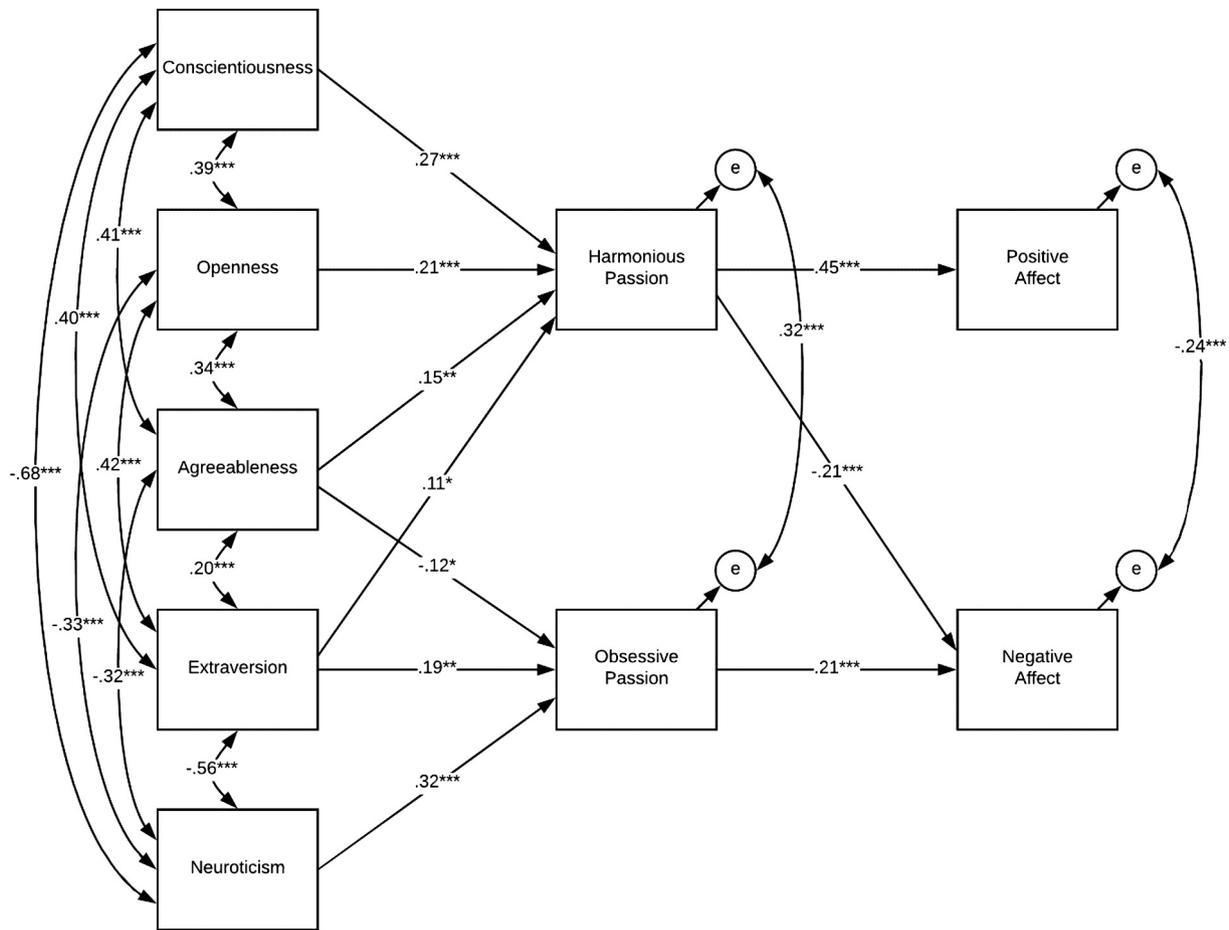


Fig. 1. Final model involving the Big Five, passion, and affect

Although not indicated in the figure, direct links between conscientiousness and both Positive ($\beta = 0.22, p = .001$) and Negative ($\beta = -0.22, p < .001$) Affect, Agreeableness and Negative Affect ($\beta = -0.18, p = .001$), Extraversion and Positive Affect ($\beta = 0.18, p = .001$) and between Neuroticism and Positive Affect ($\beta = 0.14, p = .043$) were included in the model. Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

the quality of activity engagement as reflected by the type of passion (HP and OP), play a key role in determining the valence (i.e., positive or negative) of their affective experiences. To paraphrase Ryan (1995), these findings underscore the fact that life is not lived as a trait but rather in specific and meaningful contexts and situations, as is the case with specific activities that people are passionate about.

Overall, the present results provide evidence of the relationship between personality and passion, thus unifying the Big Five Model of Personality (Costa & MacCrae, 1992) and the DMP (Vallerand, 2015; Vallerand et al., 2003). These findings provide a better understanding of the effects of personal factors on the emergence and development of HP and OP. It would appear that certain personality traits lead people to develop different types of passion toward meaningful activities, thereby disposing them to experience adaptive or less adaptive outcomes such as positive or negative emotions.

7. Limitations and future research

The present findings have some limitations. First, although the results of the present studies are consistent with causal interpretation, the correlational design used prevents such an inference. The use of an experimental or longitudinal design would help to more clearly define the causal relation between personality and passion. Second, the present study relied exclusively on self-report data, leading to potential biases such as social desirability. Indeed, past research has shown that the NEO-PI is related to social desirability (Lee & Ashton, 2013). In contrast, the Passion Scale is unrelated to social desirability (Rousseau,

Vallerand, Ratelle, Mageau, & Provencher, 2002). Nevertheless, future research should replicate the current findings using other measures of personality traits, such as the HEXACO scales (Ashton & Lee, 2009) or other sources of information, such as informant reports. Third, future research is needed to replicate our findings with other samples (e.g., athletes, students, workers, etc.), as well as with other outcomes, such as behavior and cognitions. Finally, future research should also consider how contextual factors such as the level of autonomy support provided by social agents may interact with personality traits in further affecting the development of both types of passion. For instance, past research has shown that autonomy support from adults predicts the development of HP in children (e.g., Mageau et al., 2009). Does autonomy support protect one against the effects of neuroticism on OP? And if so, what are the psychological processes at play? Additionally, research has shown that need satisfaction (Ryan & Deci, 2017) represents a powerful determinant of passion (see Lalande et al., 2017). In this regard, does need satisfaction mediate the effects of personality trait on passion? This would provide insight into a unified model of the determinants and consequences of passion, integrating factors from the person, the activity, and the environment.

In sum, the results of the present research suggest that the personality traits of the Big Five Model contribute to the development of HP and OP. Clearly, broad personality factors must be accounted when studying the development of passion and how the latter contributes to a meaningful existence.

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