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# The Big Five and Dark Triad: The Role of Personality in the Development of Passion

Hannah Behar

University of Richmond, [hannah.behar@richmond.edu](mailto:hannah.behar@richmond.edu)

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The Big Five and Dark Triad:  
The Role of Personality in the Development of Passion

By  
Hannah Behar

Honors Thesis

Submitted to:

Psychology Department  
University of Richmond  
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Advisor: Dr. Violet Ho

### **Abstract**

The present work explored the connection between personality and the Dualistic Model of Passion (DMP) and whether psychological safety moderated this relationship. The first study comprised 109 Introduction to Psychology students at the University of Richmond, and the second study measured 128 MTurk participants. The web-based survey administered to both samples consisted of measures assessing Harmonious Passion (HP), Obsessive Passion (OP), the Big Five traits, the Dark Triad traits, and Psychological Safety (PS). Due to reliability concerns, only OP and the Dark Triad traits could be used to assess the MTurk sample. Results from regression analysis showed that among MTurk participants, psychopathy and narcissism are positively associated with OP, while Machiavellianism showed no significant relationship with the DMP. Among students, openness to experience and narcissism predicted HP. Conscientiousness was positively related to both HP and OP but was a stronger predictor of OP. Neuroticism was also positively associated with OP in the student sample. Although no moderation effects were found, psychological safety was the strongest predictor of harmonious passion compared to all personality traits. These results suggest that creating a warm environment where individuals feel comfortable taking risks may play a more meaningful role in developing harmonious passion.

## **The Big Five and Dark Triad: The Role of Personality in the Development of Passion**

Passion has been a topic of great importance and fervor since the rise of ancient philosophers, such as Aristotle, who perceived passion as necessary for higher achievement. He and 17th-century philosopher René Descartes (1649) argued that passions are positive when reason underlies behavior (Feertchak, 1996; as cited in Mageau et al., 2009). Furthermore, they believed passion to be adaptive and to lead to beneficial outcomes, while others argued that it could be maladaptive and lead to obsession and loss of control (Lagache, 1936; Spinoza, 1953; as cited in Mageau et al., 2009). These suppositions led to research investigating two types of passion: Harmonious and Obsessive (Vallerand et al., 2003). Harmonious passion (HP) represents the former view held by Aristotle, while obsessive passion (OP) represents the latter view, and together, they are captured in the Dualistic Model of Passion (DMP; Vallerand et al., 2003).

General passion is described as a strong inclination toward an activity one values and loves to which the individual will dedicate time and energy (Vallerand et al., 2003). Understanding how passion develops is crucial to creating tactics that enhance our ability to cultivate the healthy passion that Aristotle found so valuable. Much research has explored the consequences of passion in the workplace, school, sports, and other settings. Previous literature has confirmed the incredible benefits HP can have. For example, it has been found to improve psychological well-being and job satisfaction at work (Vallerand & Houliort, 2019; Lavigne et al., 2014), as well as increase dedication and decrease cynicism among students (Stoeber et al., 2011), to name a few. Conversely, OP has been found to increase burnout, negative affect, and depression among employees (Vallerand & Houliort, 2019) and hinder educational persistence in university students (Bonneville-Roussy et al., 2013). Given the incredible positive impact of HP

and the detrimental effects of OP in both the workplace and education, it is critical to explore how passion evolves and whether individuals might be primed to develop either type of passion. Unfortunately, far less work has explored predictors of passion and how it forms over time. The present research questions what variables can sway an individual to develop either harmonious or obsessive passion.

Vallerand (2015) discusses that the development of passion is a function of the interaction between the activity, the environment, and the person. An activity can become more passionate if the three basic psychological needs are fulfilled while doing the activity. The three needs are autonomy, competency, and relatedness, as outlined by the Self-Determination Theory (SDT; Ryan & Deci, 2017). Previous work has also explored how the environment influences the development of passion. For example, previous literature has shown that high levels of autonomy support help develop HP, while if an individual experiences external pressure or control during their activity, it may become obsessive (Mageau et al., 2009).

The focus of the current study is the latter part of the passion interaction: the person. Previous work has explored the relationship between various personality traits and passion, such as an autonomous personality vs a controlled personality (Vallerand et al., 2006), as well as levels of impulsivity (Orosz et al., 2018). Assessing the relationship between passion and broader personality traits such as the Big Five and Dark Triad traits would be critical to gaining insight into how passion develops within the individual, thus creating strategies that increase the likelihood of healthy passion. The Dark Triad encompasses three higher-order personality constructs: Machiavellianism, narcissism, and psychopathy (Jones & Paulhus, 2003). The Triad describes socially malevolent characteristics that are more prevalent among men (Muris et al., 2017) and is associated with risky behavior (Crysel et al., 2013). The relationship between the

Dark Triad and the DMP has not been explored in previous literature, but it would be beneficial in developing our understanding of how passion develops in various types of people, as well as gaining more general knowledge on those with darker personality traits.

The Big Five trait model has been found to encompass most human behaviors and provides a more generalizable understanding of personality (Costa & McCrae, 1992). It includes Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. Assessing its relationship to passion is crucial to developing more accurate, individualized strategies that enhance HP and mitigate OP, as the Big Five traits are more applicable to a larger audience (Costa & McCrae, 1992). Previous research by Balon et al. (2013) and Dalpé et al. (2019) assessed the relationship between the Big Five and the DMP. While these studies produced varied results, with some slight overlap, there is a clear need for a more defined relationship between these constructs. Dalpé et al. (2019) recommend future research exploring the interaction effects of contextual factors with personality and passion. Analyzing the moderating role of psychological safety, a contextual factor studied within multiple organizations (Newman et al., 2017) and, more recently, among family members (Wanless, 2016), may help explain the differences between these two studies.

Psychological safety (PS) describes perceptions of the consequences of taking interpersonal risks in a specific setting (Edmondson, 1999). When PS is high, individuals are unafraid to share opinions, ask questions, and discuss concerns. Thus, the perceptions of consequences tend to be lower, facilitating the sharing of ideas and opinions and improving learning and performance (Edmondson, 1999). In organizations, it has been found to improve learning behavior in individuals (Liu et al., 2014) and teams (Bstieler & Hemmert, 2010), job performance (Singh et al., 2013), and innovation (Gu et al., 2013).

The role of PS in human development and among family members has not been explored in as much depth, but researchers are beginning to recognize its important role here. Many individuals are in families they perceive to be psychologically safe, which indicates that they cannot take agency and explore the world around them (Cummings et al., 2012; as cited in Wanless, 2016). Fostering PS at home is crucial to increasing an individual's ability to overcome challenges and learn from mistakes (Wanless, 2016). Furthermore, research found that when teachers create a warm and responsive environment (more PS), children are more likely to exhibit greater self-regulation (Merritt et al., 2012; as cited in Wanless, 2016). This may also apply to parents providing this positive environment as well. Because of psychological safety's significant impact in both organizations and among families, it might be possible to change the relationship between personality and passion within the individual, intrapersonal constructs developing since birth. Gaining insight into how the Dark Triad and Big Five influence passion can allow us to gain a clearer picture of how passion develops, thus, creating a wider scope of more generalizable strategies in schools, organizations, and at home. Furthermore, investigating how PS interacts with the relationship between personality and passion will provide insight into how both managers and parents can impact their subordinates and children respectively.

Exploring psychological safety's moderating role in personality and passion is critical, as PS is a construct that managers and parents/family members can control. Managers can influence the development of employee relationships, which has been shown to increase PS (Carmeli et al., 2009). Further, providing role clarity, autonomy, and interdependent work can also develop PS (Frazier et al., 2016). Increasing these positive leadership practices will allow psychological safety to abound. Due to a lack of previous work on PS within the family, strategies to increase PS are mostly speculation, based on Wanless's (2016) article and her call for more research

exploring PS in human development. Although more difficult to implement, parents might change their caretaking strategies to be more open with their children, creating a safe space where their child feels they can ask them questions and allowing them to explore their interests (Wanless, 2016).

The present research uses the Big Five and the Dark Triad to shed light on the relationship between personality and the DMP. We will examine how this association may differ among college students and those in the workforce, providing preliminary evidence of how these groups differ. Priorities tend to change as we enter the workforce, and we begin placing more importance on extrinsic values than intrinsic ones (Jin & Rounds, 2012). This finding may indicate that HP is less salient for employees, which might change its relationship with personality. Although previous research has analyzed the relationship between the Big Five and the DMP, results remain unclear. The present study will provide deeper insight into this relationship. Managers can also use Big Five tests to place their subordinates in suitable positions/teams based on their characteristics. Investigating their relationship to passion will develop our understanding of these traits and thus use them most effectively. Furthermore, the association between the Dark Triad and passion has not been explored in previous work, and it is critical to gain insight into how those who score high on these traits view their passionate activities. Finally, examining numerous personality traits paints a clearer picture of how personal factors contribute to both HP and OP.

Moderators between personality and passion are limited in the literature, and we consider psychological safety as one possible factor. By understanding the effects of PS on personality and passion, we can learn how harmonious passion can be developed and obsessive passion diminished. Results will also provide insight into the significance of PS as a construct. Finally,



we question whether it can alter the relationship between personal characteristics that have evolved since childhood. The present work will examine the links between personality (Big Five and Dark Triad traits) and the Dualistic Model of Passion (HP and OP) and whether psychological safety moderates this relationship.

## **Literature Review**

### *The Dualistic Model of Passion*

Vallerand et al. (2003) outline the Dualistic Model of Passion, which defines the difference between harmonious and obsessive passion. General passion is a strong inclination toward an activity one values and loves, to which the individual will dedicate time and energy. Harmonious and obsessive passion both fall under this category, but the approach to the valued activity varies. Vallerand et al. (2003) distinguished the two using the Self Determination Theory (SDT) (Deci & Ryan, 1985, 2000). This theory posits that humans have three basic psychological needs: Autonomy, competence, and relatedness. When these needs are fulfilled, the individual can effectively internalize external behavioral mechanisms and experience self-determination. This results in enhanced motivation, high-quality performance, and persistence. However, in controlling, overdemanding, and rejecting environments, a breakdown of the internalization process and self-protective responses may occur instead (Deci & Ryan, 1985, 2000).

Vallerand et al. (2003) use the Self Determination theory to argue that harmonious passion (HP) is more likely to occur when the three needs are met. For example, HP will likely abound when people value their activity for autonomous reasons, such as the satisfaction it brings them. This passion produces a strong but controllable desire to engage in the valued activity. It is not all-consuming, but only a significant part of one's identity that is integrated into

other aspects of life. HP also allows the person to engage in other activities and remain open-minded. For example, the individual might take a break and put this activity away to spend quality time with friends or family (Vallerand et al., 2003).

Conversely, obsessive passion (OP) represents a strong and uncontrollable desire to engage in the cherished activity. In reference to SDT, this type of passion is hypothesized to result from a lack of fulfillment of the three basic needs. This deficiency can lead to internalizing inner or external pressures, such as social acceptance or financial issues. Individuals might value their activity for controlled reasons (rather than autonomous), such as the monetary benefits it provides. Engaging in the activity is uncontrollable as the external pressures weigh down. It becomes a substitute for self-worth, providing ego-driven reassurance and protective functions. Thus, self-esteem tends to fluctuate with the level of performance. The activity begins to take precedence over other life domains, making it challenging to focus on other interests and responsibilities (Vallerand et al., 2003).

When using the Self-Determination theory and the three psychological needs to define the Dualistic Model of Passion, it becomes clear that personal factors play a significant role in developing the mode of passion. Past work has shown that HP positively relates to concentration, attention, positive affect, high-quality relationships, and well-being (Marsh et al., 2013). Conversely, OP is positively related to negative affect, conflict, and rumination (Marsh et al., 2013). The development of passion is a function of the activity itself, the environment (SDT Psychological Needs), and the person (Vallerand, 2015). As the latter function highlights, personality traits may play a significant role in developing one's passion, but it has not been explored in depth. The present research will analyze the Big Five traits and the Dark Triad and their relationship with the dualistic model of passion.

### *Predictors of Passion*

Thus far, little work has analyzed the relationship between personality and passion, but many precursors to passion have been explored. Vallerand and Houliort (2019) identified many such precursors in the literature in their book *Passion for Work*. Personal factors have been shown to be instrumental in the development of passion, which indicates that personality may also play an important role. For example, emotional intelligence, self-awareness, and the engagement of personal strengths help develop HP. Having an autonomous personality orientation is also correlated to the development of HP. Activity availability, autonomy in activity selection, the perceived value of the activity, and the internalization of the activity in their identity were positively associated with HP. Furthermore, having significant adults, such as parents, teachers, and coaches, that allow for autonomy in the passionate activity can help foster HP among children and teenagers (Mageau et al., 2009; as cited in Vallerand & Houliort, 2019).

Leaders in organizations can also help develop HP through transformational leadership, which indicates they view employees as individuals capable of making significant contributions to the company (Vallerand & Houliort, 2019). However, transactional leaders who create rigid boundaries and provide little opportunity for autonomy tend to foster OP among employees or mitigate passion completely. Ho and Astakhova (2020) further showed that leaders with HP led to HP among employees, which was mediated by charismatic leadership. Ho et al. (2011) discuss that to develop HP in employees, leaders must increase employees' valuation and interest in their work, which can be done by creating conditions where they feel their contributions matter. These results suggest that leaders can play a significant role in developing healthy passion within their subordinates. Previous work has also explored the impact of parenting on the DMP. Results showed that high schoolers who had parents that cared positively were more likely to exhibit HP,

while those with overprotective parents or parents that granted excessive autonomy were positively associated with OP (Tóth-Király et al., 2021). In contrast, another study found that children and teenagers with parents who supported their autonomy were more likely to develop HP (Mageau et al., 2009). Because of previous literature exploring how managers and parents can influence passion, the present work will explore psychological safety (PS) as a moderating variable between personality and passion, as these leaders have control over developing PS within their organizations (Edmondson, 1999), and family (Wanless, 2016), respectively (discussed previously in the introduction).

#### *Personality Factors: The Big Five and Dark Triad*

Past work has shown the relationship between the three psychological needs (autonomy, competence, relatedness) and the Dualistic Model of Passion. There is also a link between personality factors and the emergence of passion. For example, an autonomous personality orientation, a tendency to do an activity for pleasure or personal choice, is associated with developing HP. While those with a controlled personality orientation, a tendency to do an activity out of external or internal pressure, are more likely to develop OP. These results were found in a study assessing passion in a sports setting (Vallerand et al., 2006). Furthermore, Orosz et al. (2018) found a relationship between impulsivity and OP when assessing passion in video gameplay.

Balon et al. (2013) identified that broader personality traits might play a role in the emergence of passion. These authors utilized psychology's most predominant personality theory: The Big Five Model (Costa & McCrae, 1992). The model defines personality using five bipolar dimensions: Extraversion (vs. Introversion), Agreeableness (vs. Antagonism), Conscientiousness (vs. Impulsiveness), Neuroticism (vs. Emotional stability), and Openness (vs. Closedness) to

Experience. Extraversion includes sociability, activity, assertiveness, and experience of positive affect. Agreeableness is a prosocial and communal orientation towards others, including traits of friendliness and trust. Conscientiousness describes impulse control that facilitates goal-oriented behavior, including traits of organization and self-discipline. Neuroticism includes traits of negative emotionality and instability. Finally, openness to experience describes the originality and complexity of the individual's mindset and life experience, including characteristics such as creativity and curiosity (Costa & McCrae, 1992; John & Srivastava, 1999).

In their research, Balon et al. (2013) investigated the link between passion and the Big Five using a general measure of passion rather than analyzing the Dualistic model in a specific setting. The authors found that HP positively correlates with conscientiousness, agreeableness, openness to experience, and extraversion. Interestingly, OP was only negatively correlated with agreeableness, showing no positive correlations to any other Big Five factor. Balon et al. (2013) note that their results were weaker than they hypothesized, especially that of OP. Dalpé et al. (2019) further analyzed whether the Big Traits could predict passion. They found a positive relationship between HP and conscientiousness, agreeableness, openness to experience, and extraversion. Dalpé et al. (2019) also found that neuroticism and extraversion positively predicted OP, while agreeableness was negatively associated with OP.

There is an evident lack of a definitive relationship between passion and personality traits, which is what the present research aims to shed light on. The Big Five traits are considered to encompass most aspects of human behavior, so assessing its relationship to the DMP will help to create generalizable strategies that sway an individual towards HP. As discussed in the introduction, it is necessary to explore a variety of personality traits to create a sharper picture of how personal factors play a part in the interaction with the activity and the environment to

develop passion (Vallerand, 2015). Because of this, the Dark Triad personality traits will be included in our analysis as well.

Paulhus & Williams (2002) coined the term ‘Dark Triad,’ which includes Machiavellianism, narcissism, and psychopathy. Machiavellianism was termed after a selection of statements from Machiavelli’s original books. Christie & Geis (1970) refer to this trait as encompassing interpersonal strategies that advocate self-interest, manipulation, and deception. Narcissism emerged as a DSM-defined personality disorder that included characteristics such as grandiosity, entitlement, superiority, and dominance (Raskin & Hal, 1979). Psychopathy includes character traits such as impulsivity, thrill-seeking, low empathy, and anxiety (Hare, 1985). Unlike narcissism, it is not included as an official diagnosis in the DSM. It can be difficult to tease these three traits apart, as many of their characteristics overlap. All three traits show a tendency toward self-promotion, emotional coldness, duplicity, and aggressiveness (Hart & Hare, 1998), but Paulhus & Williams (2002) concluded that they are distinct constructs and only moderately correlated. Thus far, there has been no literature exploring the connection between the DMP and Dark Triad traits. The present work will provide insight into this gap of knowledge.

#### *Moderating Role Psychological Safety*

Balon et al. (2013) and Dalpé et al. (2018) investigated the link between passion and the Big Five personality traits. These authors recommended that future research explore possible interaction effects of contextual factors within this relationship. The present work proposes that psychological safety may be one of these variables. PS describes perceptions of the consequences of taking interpersonal risks in a specific setting (Edmondson, 1999). Most of the research on this topic has been done in the context of the workplace, but it can also apply to

sports, school, or at home. Most importantly, psychological safety facilitates the sharing of ideas and, thus, improves relationships, learning, and performance (Edmondson, 1999). Therefore, PS is crucial in creating a warm and welcoming environment in any setting.

In their review article, Chen et al. (2015) note several positive outcomes associated with psychological safety. PS helps facilitate knowledge-sharing willingness among employees and mediates the relationship between charismatic leadership and knowledge-sharing. Voice, which is defined as upward-directed and promotive verbal communication, is also associated with psychological safety. Past work has shown that levels of PS had a significant effect on promoting and inhibiting voice. Edmondson (1999) also found that PS positively affects employee learning behavior, improving job performance. Therefore, psychological safety can have an incredibly positive impact on individuals and the larger organization.

Psychological safety has been found to moderate multiple work-related relationships but remains largely unexplored in the family environment. For example, with high levels of PS, the relationship between process innovativeness and profitability became positive (Baer & Frese, 2003). Conversely, when PS is low, expertise diversity has a stronger negative relationship with team performance (Martins et al., 2013). Lastly, high levels of psychological safety weaken the negative relationship between achievement orientation and role conceptualization (Tangirala et al., 2013). Although its connection to passion and personality is unknown, it is clear that PS can have significant effects on employees and their job performance. Although PS as a moderator has not been explored in the home setting, its impact on family members cannot be understated. Wanless (2016) calls for more research exploring PS in human development. Based on past work on PS, she suggests that individuals in homes with high levels of psychological safety might more freely exercise agency, take risks, and increase their willingness to engage in new

experiences (Wanless, 2016). If PS can act as a moderator between personality and passion among students and employees, managers and parents should work on fostering a safe environment where individuals can take risks and share their ideas without fear of punishment.

### *Hypotheses*

#### *H1: Harmonious Passion*

Harmonious passion (HP) will be positively associated with (a) extraversion; (b) agreeableness; (c) conscientiousness; (d) openness to experience; (e) narcissism. Hypotheses referencing the Big Five traits align with results from Dalpé et al. (2019). For hypothesis (a) extraversion, extraversion and HP have been previously associated with feelings of positive affect, which may account for this relationship (John & Srivastava, 1999; Vallerand, 2015). Extraverts are also more likely to need the company of others (Costa & McCrae, 1992), which indicates an ability to stop their passionate activity, thus predicting HP. For hypothesis (b) agreeableness, this trait, and HP are associated with a communal orientation and lack of conflict towards others (Costa & McCrae, 1992; Vallerand, 2015). Agreeable individuals would not want to cause conflict with friends or family (Costa & McCrae, 1992) by becoming overly obsessive in their passionate activity, urging them to sway towards HP. In reference to hypothesis (c) conscientiousness, this trait refers to high engagement with tasks and goals (Costa & McCrae, 1992), which would help them focus on their passionate activity and become immersed in, which is characteristic of HP (Vallerand et al., 2003). Regarding hypothesis (d) openness to experience, this trait is associated with curiosity and imagination (John & Srivastava, 1999), and a study has shown that HP predicts students' epistemic curiosity (Ruiz-Alfonso & León, 2019). Those high in openness are likely to remain open-minded and curious (Costa & McCrae, 1992), thus influencing them to explore other interests, which would indicate HP. Hypothesis (e) narcissism



explores HP's relationship to the Dark Triad traits. The trait has been correlated with high levels of emotional intelligence (Petrides et al., 2011), which has been found to be a precursor to HP (Vallerand & Houliort, 2019). Due to narcissists' high emotional intelligence, they recognize that people value HP, and so they present themselves as such to conceal their more obsessive and perfectionist nature (Smith et al. 2016). Narcissism is also not associated with limited self-control (Jones & Paulhus, 2011), strengthening this hypothesis, as those with HP can stop their passionate activity.

### *H2: Obsessive Passion*

Obsessive Passion (OP) will be positively associated with (a) neuroticism; (b) Machiavellianism; and (c) psychopathy. The hypothesis regarding neuroticism aligns with the results from Dalpé et al. (2019). For hypothesis (a) neuroticism, this trait is correlated with anxiety and perfectionism (Flett et al., 1989), which may lead to individuals with this personality trait developing an obsessive and controlled attachment to their passionate activity, thus predicting OP. In reference to hypothesis (b) Machiavellianism, a study found that the effects of ethical leadership on work engagement were less strong when leaders were high in Machiavellianism (Hartog & Belshak, 2012). OP is also not associated with work engagement, and those with OP struggle to enjoy their work (Trépanier et al., 2014). These connections suggest that Machiavellianism might be positively associated with OP. However, the connection between these constructs is not as substantially supported by the literature, so this hypothesis is mainly exploratory in nature. Lastly, (c) psychopathy has been correlated to limited self-control (Jones & Paulhus, 2011), which could lead to an uncontrollable desire to engage in the activity they are passionate about (OP) (Vallerand et al., 2003).

### *H3: Psychological Safety as a Moderator*

#### *HP*

Higher levels of psychological safety (PS) will strengthen the relationship between HP and openness to experience, conscientiousness, extraversion, and agreeableness. Higher levels of PS help individuals take risks, share opinions, and be themselves (Edmondson, 1999). With higher PS, individuals can maintain their personality at work rather than having to hide it. If an individual's personality is already primed to develop HP, it can be predicted that higher PS will allow this to shine through.

#### *OP*

Higher levels of PS will strengthen the relationship between OP and neuroticism, psychopathy, and Machiavellianism. Having a higher PS indicates that the group does not reject/judge others for being themselves (Edmondson, 1999). If an individual's personality is already primed to develop OP, it is hypothesized that higher PS will only heighten this relationship.

### **The Present Study**

The present study will investigate the relationship between personality and passion, and whether psychological safety moderates that relationship. To measure personality, the Big Five and Dark Triad trait measures will be used. Passion will be analyzed using measures assessing harmonious and obsessive passion. For MTurk participant's, the passion scale will be regarding work in their current organization, while for student participant's, the passion scale will be regarding academic passion. Psychological safety will be measured among family members for students and in their current organization for MTurk participants.

## STUDY 1

### Methods

#### Participants

A total of 116 Introduction to Psychology students completed a web-based survey administered through the SONA Introduction to Psychology student portal. This survey included the following measures: Harmonious and Obsessive Passion, The Big Five traits, the Dark Triad traits, and Psychological Safety. All respondents received course credit for completing this survey. From this sample, 7 were removed due to incorrect responses to attention check questions or a very short response time. The final sample consisted of 109 participants (84 female, 24 male, 1 undefined). The breakdown between class year was as follows: 58.7% freshmen, 33.9% sophomores, 5.5% juniors, 1.8% seniors. Participants comprised 89.9% Arts & Sciences, 8.3% Robins School of Business, and 1.8% Jepson Leadership Studies<sup>1</sup>.

#### Measures

##### *Passion*

Participants completed a Passion Scale, which is composed of two six-item subscales assessing harmonious and obsessive passion (HP and OP) (Marsh et al., 2013). The SONA student scale assessed passion towards their academics and what they study in college. An example measure of HP would be “What I study in college reflects the qualities I like about myself” ( $\alpha = 0.78$ ). An example measure of OP is “I have almost an obsessive feeling for my studies” ( $\alpha = 0.83$ ). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

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<sup>1</sup> IRB approval for this study was obtained from the University of Richmond IRB. All participants were provided a consent form before each survey that described the contents of the study, risks involved, rewards for completing the study, and a verification that they were over the age of 18.

### *The Big Five*

Participants completed a measure assessing the Big Five Personality Traits using the Mini IPIP, which consists of 20 items. The scale consists of four items for each personality trait, which are Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Donnellan et al., 2006). For the student sample, one item was removed from the openness to experience measure to increase reliability from ( $\alpha = 0.63$ ) to ( $\alpha = 0.68$ ). This item was “I have difficulty understanding abstract ideas (R).” This was done to bring the reliability closer to 0.70, which is considered most acceptable. Alphas and example measure for the other four traits are as follows: Conscientiousness (“I get chores done right away.”;  $\alpha = 0.68$ ), Extraversion (“I am the life of the party”;  $\alpha = 0.84$ ), Agreeableness (“I sympathize with others’ feelings”;  $\alpha = 0.67$ ), and Neuroticism (“I have frequent mood swings”;  $\alpha = 0.69$ ). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

### *The Dark Triad*

To assess Dark Triad traits, participants completed The Short Dark Triad (SD3), which is composed of three nine-item subscales measuring Machiavellianism, Narcissism, and Psychopathy (Jones & Paulhus, 2014). Three items were removed from the psychopathy measure due to two including inappropriate topics for students (“I have never gotten into trouble with the law” (R) and “I enjoy having sex with people I hardly know”) and one for having low reliability. For the student sample, Cronbach’s alpha for each trait are as follows: Machiavellianism ( $\alpha = 0.86$ ), Narcissism ( $\alpha = 0.68$ ), and Psychopathy ( $\alpha = 0.73$ ). Examples measures for each trait: Machiavellianism (“I like to use clever manipulation to get my way”), Narcissism (“Many group activities tend to be dull without me”), and Psychopathy (“Payback needs to be quick and

nasty”). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

### *Psychological Safety (PS)*

Participants completed the Team Psychological Safety scale, which consists of seven items assessing perceived ability to take risk in a specific setting (Edmondson, 1999). Language was changed to assess psychological safety among family members (It is difficult to ask my family for help (R)”;  $\alpha = 0.79$ ). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

### *Demographic Measures*

The SONA student sample provided information on Gender (Male, Female, Nonbinary, Other), Class Year (Freshmen, Sophomore, Junior, Senior), and School Affiliation at the University of Richmond (School of Arts & Sciences, Robins School of Business, and Jepson School of Leadership Studies).

## **Results**

### *Analyses*

Three series of analyses were conducted to assess the relationship between personality and passion, and the moderating effect of psychological safety. For the SONA student sample, (1) correlations between the Big Five, Dark Triad, HP, OP, and Psychological Safety were assessed; (2) regression analyses were run to assess whether the Big Five and Dark Triad traits predicted both types of passion; and (3) the interaction effects of psychological safety were tested within these relationships. All analyses were run on SPSS statistics software.

### *Correlations between study variables*

Descriptive statistics and bivariate correlations between demographic variables, HP, OP, the Big Five, the Dark Triad, and psychological safety (PS) are presented in the table below.

*Descriptive statistics and bivariate correlations between study variables among student sample (Study 1).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1. Gender</b>	0.22	0.42	--													
<b>2. Class Year</b>	1.50	0.69	0.06	--												
<b>3. School Affiliation</b>	1.12	0.38	0.07	0.16	--											
<b>4. HP</b>	3.77	0.57	-0.02	0.01	0.04	(0.78)										
<b>5. OP</b>	2.12	0.78	-0.03	-0.01	0.04	0.15	(0.83)									
<b>6. Extraversion</b>	3.18	0.96	-0.20*	0.11	0.09	0.20*	0.00	(0.84)								
<b>7. Agreeableness</b>	4.08	0.65	-0.35**	0.01	-0.07	0.31**	-0.08	0.41**	(0.67)							
<b>8. Conscientiousness</b>	3.46	0.77	-0.07	-0.07	-0.12	0.20*	0.14	0.01**	0.24*	(0.68)						
<b>9. Neuroticism</b>	3.16	0.79	-0.30**	-0.13	0.05	-0.07	0.22*	-0.03	-0.02	-0.1	(0.69)					
<b>10. Openness</b>	3.90	0.64	0.02	0.00	-0.20*	0.21*	0.12	0.02	0.02	-0.19	0.15	(0.68)				
<b>11. Machiavellianism</b>	2.85	0.73	0.19	-0.13	-0.01	0.02	0.24*	-0.15	-0.15	-0.17	0.25**	0.01	(0.86)			
<b>12. Narcissism</b>	2.95	0.56	0.10	0.07	0.17	0.29**	0.21*	0.46**	0.11	0.16	-0.02	0.13	0.21*	(0.68)		
<b>13. Psychopathy</b>	2.31	0.67	0.17	-0.05	0.01	-0.02	0.27**	0.04	-0.17	-0.20*	0.23*	0.14	0.55**	0.38**	(0.73)	
<b>14. PS</b>	3.18	0.69	0.02	-0.06	0.03	0.38**	-0.12	0.06	0.19*	0.31**	-0.15	0.04	-0.28**	0.03	-0.25**	(0.79)

*Note:* \*  $p < .05$ , \*\*  $p < .01$ . *M* and *SD* are used to represent mean and standard deviation, respectively. Pearson Correlation coefficients are reported. Diagonals represent the alphas for reliability coefficients (in parentheses). Gender is represented by female (0) and male (1). Class year is represented by freshmen to senior (1-4, respectively). School affiliation is represented by School of Arts & Sciences (1), Robins School of Business (2), and Jepson School of Leadership (3)

### *Regression analysis of the association between Big Five/Dark Triad Traits and Passion*

Regression analyses were conducted to test whether the Big Five and Dark Triad traits predicted HP and OP (see Table 2). Hypotheses regarding the Big Five traits were made based on past work from Dalpé et al. (2019), as well as general facets of each trait and their relationship with either HP or OP. All predictors were first scale centered on SPSS. Demographics were controlled for in each regression, and because none were significant, they were removed from

further analysis. All traits in the Big Five were controlled for in a single regression. Results from this revealed that conscientiousness ( $\beta = 0.15, p < .05$ ) and openness to experience ( $\beta = 0.20, p < .05$ ) predicted HP. The present results partially replicated research from Dalpé et al. (2019), which found that agreeableness and extraversion also predicted HP. The student sample also showed that conscientiousness ( $\beta = 0.15, p < .05$ ) and neuroticism ( $\beta = 0.22, p < .05$ ) were positively associated with OP. Dalpé et al. (2019) also found a positive association between neuroticism, but did not see any association with conscientiousness. They also found that agreeableness negatively predicted OP, which was not replicated in the present study.

Hypotheses regarding these traits were mostly exploratory in nature, as the relationship between the Dark Triad and passion has not been assessed in previous literature. Predictions were based on facets of each trait and their connections to HP or OP found in previous literature. All traits from the Dark Triad were controlled for in a single regression. Results showed that only narcissism was a predictor of HP ( $\beta = 0.136, p < .001$ ), which confirms our original hypothesis. There was no association between Machiavellianism and Psychopathy to either HP or OP. This rejects our original hypothesis which predicted these two traits would be positively associated with OP.

Because only a small number of traits predicted either HP, an exploratory regression was run to test the association between psychological safety and the two types of passion. This relationship was not previously hypothesized. The Big Five, Dark Triad, and psychological safety were run in a single regression with both HP and OP. Results showed that psychological safety negated all other relationships between personality and harmonious passion, making psychological safety the strongest predictor of HP compared to all traits ( $\beta = 0.27, p < .001$ ). There was no significant association between PS and OP.

**Table 2.**

*Regression Analysis of Big Five and Dark Triad traits as predictors of passion among student sample (Study 1).*

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	<b>HP</b>	<b>OP</b>	<b>HP</b>	<b>OP</b>	<b>HP</b>	<b>OP</b>
<b>BIG FIVE</b>						
Extraversion	0.08	0.07			0.03	0.03
Agreeableness	0.16.	-0.28			0.20	-0.18
Conscientiousness	0.15*	0.24*			0.05	0.28*
Neuroticism	-0.06	0.22*			-0.04	0.15
Openness	0.20*	0.21			0.14	0.18
<b>DARK TRIAD</b>						
Machiavellianism			0.03	0.15	0.15	0.11
Narcissism			0.36**	0.18	0.20	0.11
Psychopathy			-0.14	0.17	-0.07	0.15
<b>Psychological Safety</b>					0.27**	-0.12

*Note: \*  $p < .05$ , \*\*  $p < .001$ ; reporting Unstandardized Beta*

Model 1: Passion with the Big Five

Model 2: Passion with the Dark Triad

Model 3: Passion with Big Five, Dark Triad, and Psychological Safety

### *Interaction effects*

Interaction variables were created by multiplying each scale centered trait by scale centered psychological safety. The Big Five, Dark Triad, psychological safety, and one interaction variable was put into a single regression for each trait from the Big Five and Dark Triad. No moderating effects of psychological safety were found in the relationship between personality and passion. These results are explored further in the discussion. - appendix

## **STUDY 2**

### **Methods**

#### **Participants**

The second study was done at two time points, as to decrease the likelihood of them predicting the nature of the study. A total of 400 Mechanical Turk (MTurk) participants completed the first wave of the study, which was a web-based survey, including the



Psychological Safety, Big Five, and Dark Triad measures. Participants were rewarded \$0.50 for their time. 107 participants were removed due to incorrect responses to attention check questions, repetitive answers, fast response times, or if they wrote that their full-time work experience was shorter than their work experience at their current organization. Of the remaining 293 participants, MTurk IDs were recorded and the second wave of the study was administered to them. This web-based survey included measures of obsessive and harmonious passion. Participants were rewarded \$1.00 for their time. A total of 259 participants completed this second wave of the study, and 131 participants were removed due to incorrect responses to attention check questions, repetitive answers, or fast response times. The final sample composed of 128 participants (45 females, 82 males, 1 undefined), aged from 22-67 ( $M = 35.42$ ;  $SD = 9.58$ ), with an education level ranging from high school graduate to a professional degree (60.2% having completed a bachelor's degree). Full time work experience ranged from 1 to 48 years ( $M = 9.64$ ;  $SD = 9.62$ ) and experience at that their current organization ranged from 1 to 35 years ( $M = 5.80$ ;  $SD = 4.80$ )<sup>2</sup>.

## Measures

### *Passion*

Participants completed the same passion scale as noted in Study 1 (Marsh et al., 2013), but the language was changed to assess passion at work/in their organization. For HP an example measure would be “What I do at work allows me to have a variety of experiences” ( $\alpha = 0.42$ ). HP was removed from results analysis due to low reliability. An example measure for OP is “My

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<sup>2</sup> IRB approval for this study was obtained from the University of Richmond IRB. All participants were provided a consent form before each survey that described the contents of the study, risks involved, rewards for completing the study, and a verification that they were over the age of 18.

work is the only thing that really makes me excited.” ( $\alpha = 0.76$ ). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”)

### *The Big Five*

Participants completed the Big Five Personality Trait measure using the Mini IPIP, as noted in Study 1 as well (Donnellan et al., 2006). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”). The Big Five measure from the MTurk participants was not used in further analyses due to low reliability of all trait subscales.

### *The Dark Triad*

To assess Dark Triad traits, participants completed The Short Dark Triad (SD3), which is composed of three nine-item subscales measuring Machiavellianism, Narcissism, and Psychopathy (Jones & Paulhus, 2014). The same measure was used in Study 1 as well. The item “I feel embarrassed when someone complements me” was removed from the Narcissism subscale to raise the alpha from  $\alpha = 0.56$  to  $\alpha = 0.66$ . The MTurk alphas for the two other traits are as follows: Machiavellianism ( $\alpha = 0.78$ ) and Psychopathy ( $\alpha = 0.69$ ). All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

### *Psychological Safety (PS)*

Participants completed the same Team Psychological Safety measure, as noted in Study 1, but the language was changed to assess psychological safety in the workplace (“It is safe to take a risk where I work”). The alpha for psychological safety was too low to include in further analysis. All items were rated using a Likert scale ranging from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

### *Demographic Measures*

The MTurk participant survey included demographic measures such as gender, age, education level, length of work experience at their current organization, and length of full-time work experience.

### **Results**

For the MTurk sample, only the Dark Triad traits and OP had a high enough Cronbach's alpha to run analyses. Correlations and regression analysis were run to assess the association between the Dark Triad and OP. All analyses were run on SPSS statistics software.

#### ***Correlation analysis***

Descriptive statistics and bivariate correlations between the demographic variables, the Dark Triad traits and OP among MTurk participants are represented in the table below (Table 3).

**Table 3.**

*Descriptive statistics and bivariate correlations between Dark Triad Traits and OP among MTurk sample (Study 2).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
<b>1. Gender</b>	0.65	0.48	--								
<b>2. Age</b>	35.42	9.58	-0.06	--							
<b>3. Education Level</b>	11.17	0.96	0.27**	0.02	--						
<b>4. Length of work experience at current organization</b>	5.80	4.80	-0.07	0.20*	0.01	--					
<b>5. Length of full-time work experience</b>	9.64	9.62	-0.09	0.55**	0.03	0.74**	--				
<b>6. OP</b>	3.65	0.77	0.13	-0.12	0.19*	-0.22*	-0.26**	(0.76)			
<b>7. Machiavellianism</b>	3.63	0.66	0.18**	-0.07	0.16	0.04	-0.03	0.58**	(0.78)		
<b>8. Narcissism</b>	3.35	0.62	-0.06	-0.06	0.05	-0.12	-0.08	0.51**	0.59**	(0.69)	
<b>9. Psychopathy</b>	3.36	0.74	0.21*	-0.17	0.23**	-0.14	-0.27	0.66**	0.69**	0.54**	(0.69)

*Note:* \*  $p < .05$ , \*\*  $p < .01$ . *M* and *SD* are used to represent mean and standard deviation, respectively. Pearson Correlation coefficients are reported. The diagonal represents the alphas for reliability coefficients (in parentheses). Gender is represented by female (0) and male (1). Age, length of work experience at the current organization, and length of full-time work experience are represented in years. The mean education level indicates that most participants have a bachelor's degree (11).

#### ***Regression analysis of the association between the Dark Triad traits and OP***

Regression analyses were conducted to test whether the Dark Triad traits predicted OP.

All predictors were first scale centered on SPSS. MTurk demographics were controlled for in this

regression. It was found that only education level was a predictor of OP, so this was included in further analysis. When controlling for education level and all Dark Triad traits in a regression, it was found that narcissism ( $\beta = 0.21, p < .05$ ) and psychopathy ( $\beta = 0.46, p < .001$ ) predicted OP, while Machiavellianism showed no significant results (see Table 4). The relationship between the Dark Triad and passion has not been explored in previous literature. Interpretation and future directions regarding this relationship will be explored in the discussion.

**Table 4.**  
*Regression of Dark Triad Traits and OP among MTurk participants (Study 2)*

	<b>OP</b>
Machiavellianism	0.17
Narcissism	0.21*
Psychopathy	0.46**

*Note:* \*  $p < .05$ , \*\*  $p < .001$ ; reporting Unstandardized Beta

## Discussion

The primary purpose of this study was to assess the extent to which personality traits can predict passion and whether psychological safety can moderate this relationship. The Dualistic Model of Passion (DMP) asserts that the development of passion is a product of the activity itself, the environment, and the person and is composed of harmonious and obsessive passion (Vallerand, 2015). This research first sought to explore the importance of the latter personal factors, focusing specifically on personality traits (The Big Five and Dark Triad). Secondly, it investigated the possible moderation role of psychological safety to explore how the environment impacts the relationship between personality and passion. In the MTurk participant sample, narcissism and psychopathy were strong predictors of OP. Results from the SONA student

sample showed that openness, conscientiousness, and narcissism positively predicted HP, while neuroticism and conscientiousness predicted OP. Unexpectedly, no moderation effects were significant, but psychological safety was one of the strongest predictors of HP.

### *The Big Five and Passion*

Two previous studies have investigated the relationship between The Big Five and the DMP, with contrasting results. Balon et al. (2013) assessed the correlational relationship, finding that HP correlated with conscientiousness, agreeableness, openness to experience, and extraversion, while OP only negatively correlated with agreeableness. Dalpé et al. (2019) found that conscientiousness, agreeableness, openness to experience, and extraversion predicted HP, while extraversion and neuroticism positively predicted OP.

In the Introduction to Psychology sample, conscientiousness and openness predicted HP, while conscientiousness and neuroticism predicted OP. Conscientiousness was a stronger predictor of OP than HP. This finding contradicts the hypothesis and previous research that only found a positive relationship between HP and conscientiousness. This unexpected result may be due to our student sample. Students tend to create a highly competitive atmosphere in an undergraduate academic environment. Conscientious students may place demanding expectations on themselves and, thus, become obsessive in their studies. One study found a relationship between conscientiousness and all three burnout constructs (emotional exhaustion, cynicism, and professional efficacy) among university students (Morgan & Bruin, 2010). Previous work has also found a relationship between OP and burnout (Vallerand & Houliort, 2019). These relationships may account for why conscientiousness is a strong predictor of OP among students.

Extraversion and agreeableness showed no relationship with academic passion. These results contrast previous work, which found that extraversion predicted both HP and OP, and agreeableness was positively associated with HP (Dalpé et al., 2019). The results also failed to support our original hypothesis, which predicted that extraversion and agreeableness would be positively associated with HP. These unexpected results may be due to a lack of power in the present study, or it is possible that personality traits may not be as influential in the development of passion among university students. Only three of the five Big Five traits showed a relationship with the DMP. Dalpe et al. (2019) also used a passion scale to assess an activity the participant loved and spent significant time on. The present study used a measure assessing academic passion, and differences in the passionate activity assessed may account for contrasting results. Lastly, psychological safety was a stronger predictor of passion (HP) than any Big Five trait. It is possible that creating a warm and welcoming environment at home, where an individual feels comfortable taking risks and sharing opinions with family members, might be more essential for developing harmonious academic passion than more stable personality traits.

The present study does not replicate previous literature on the relationship between the Big Five and the DMP. This suggests that the role of personal factors in developing academic passion may need to be explored further. Other more specific personal factors have been explored in the development of passion, such as impulsivity (Orosz et al., 2018), perfectionism (Verner-Filion & Vallerand, 2016), or having an autonomous vs. controlled personality orientation (Vallerand et al., 2006). More specific personal factors may be more influential in developing passion than our broader personality traits, or this is potentially only true among students. Future research should assess the differences in the Big Five – DMP relationship between the two populations (students vs. working-age adults). The DMP posits that passion develops when all three basic

psychological needs are met (autonomy, competence, and relatedness) (Vallerand et al., 2003). This most often only refers to the environment created in a specific setting. However, it is possible that personality traits related to these three needs, such as an autonomous personality orientation, self-efficacy, and an individual's ability to connect with others, could have a stronger relationship with the DMP. More research should be done to explore connections between Self-Determination Theory and the DMP.

### *The Dark Triad and Passion*

The present study found varied connections between the Dark Triad and DMP between the two samples. Among MTurk participants, psychopathy and narcissism predicted OP, while Machiavellianism presented no significant results. In contrast, only narcissism predicted HP among the SONA student sample, while psychopathy and Machiavellianism showed no significance with HP or OP. These results provide preliminary evidence of the relationship between the Dark Triad traits and the DMP, as previous literature has not explored this connection. It is essential to understand this relationship as it provides a foundation for developing individualized methods that enhance HP and mitigate OP. Moreover, it builds upon previous work on the Dark Triad to help better understand individuals with these personality traits.

It was hypothesized that narcissism would predict HP, while psychopathy and Machiavellianism would predict OP based on general elements of the personality trait. In the SONA sample, narcissism predicted HP; in the MTurk sample, psychopathy predicted OP, which confirmed our hypotheses. The consistent lack of significance of Machiavellianism rejects the hypothesis made. This suggests that the cold manipulators may not be predisposed to either type of passion. Another personal factor may be at play that may sway a Machiavellian one way or

another. This trait also focuses primarily on the dichotomous relationship between the Machiavellian and the *other*. It is defined as manipulating and exploiting *others*, regarding *others* as untrustworthy, and maintaining power over *others* (Paulhus & Williams, 2002). Because Machiavellianism focuses on this interpersonal relationship, the trait may be less influential in developing more intrapersonal characteristics, such as passion. Future research must explore what may influence a Machiavellian to develop HP over OP and whether that is a product of their environment or a different personality trait.

Psychopathy is characterized by high impulsivity, thrill-seeking, and low empathy (Hare, 1985). Results from the MTurk sample showed that psychopathy was a predictor of OP, which agrees with our hypothesis. Previous work has shown that impulsivity is a determinant of OP, which may explain why psychopathy strongly predicts OP in this sample. Interestingly, the student sample did not show the same results. Students may be less willing to report psychopathic tendencies due to social desirability. This may be especially true among first-year students just entering a new school, which comprised most of the present sample. They may also be less likely to admit that they can be mean to others and enjoy revenge. However, it is also possible that psychopathy may not predict academic OP, and this relationship may only be present regarding passion for work. Further research will be needed to explore other university student populations. It may also help to use an expanded Dark Triad measure to include more variables rather than the Short Dark Triad. This tactic may allow for increased accuracy in collected data.

The final Dark Triad trait, narcissism, was a predictor of HP among the student sample and a predictor of OP in the MTurk sample. This trait is characterized by grandiosity, entitlement, superiority, and dominance (Raskin & Hall, 1979). Due to the low reliability of HP



in the MTurk sample, its relationship to narcissism could not be analyzed. Because of this, only the SONA sample could confirm our original hypothesis. Narcissism has been associated with high emotional intelligence (Petrides et al., 2011), a characteristic also associated with HP (Vallerand & Houliort, 2019). Narcissism has also been correlated with functional impulsivity, an adaptive form of impulsivity (Jones & Paulhus, 2011). It has been shown to predict idea generation (Brunas-Wagstaff et al., 1996), enthusiasm, adventurousness, and the ability to make quick decisions (Dickman, 1990). Narcissism has also been directly correlated with creativity (Raskin, 1980). HP has been found to induce positive emotions, leading to creative idea generation. Those with HP can explore other interests and remain open-minded (Vallerand, 2015, pp. 244–276). These relationships in the literature may explain why narcissism was the strongest predictor of HP compared to all other traits. Because narcissism was such a strong predictor among students, it can be expected that this relationship should also translate to a passion for work among employees. Although, future studies will be needed to confirm this hypothesis.

Surprisingly, narcissism was a strong predictor of OP among MTurk participants. Previous work assessing those hospitalized for professional burnout found a relationship between narcissism and burnout constructs, specifically the depressive symptoms construct (Schwarzkopf et al., 2016). Both burnout and depressive symptoms have been associated with OP as well (Vallerand & Houliort, 2019). It is possible that narcissists only become obsessive in their activity when they enter the workforce. Their perfectionist personality (Smith et al., 2016) may overtake them to the point of obsessiveness and, thus, eventually, burnout and depression. At work, they may not be permitted to be adventurous and utilize their creative brainstorming skills (Raskin, 1980), as they are required to complete the specific task hand. While at university, these

individuals may be able to explore their interests and be creative with their work, thus fostering harmonious passion.

The present study provides the first insight into the connection between the Dark Triad and the Dualistic Model of Passion. The strength of narcissism as a predictor of HP among students suggests that facets of this personality trait are related to the DMP. This result does not imply that we should focus on developing a narcissistic personality, as there are many other adaptive methods to foster harmonious passion. Psychopathy's strong connection with OP among MTurk participants suggests that those with this trait may struggle to develop healthy passion at work. These results only provide a clearer picture of how passion develops and enhance our knowledge of those with Dark Triad traits. The present study provides a foundation for further testing the connection between these traits and the DMP, as well as other interaction variables, as psychological safety showed no interaction effects. It would be interesting to see how results might vary with different universities and industries.

#### *Psychological Safety (PS) as a Predictor of Harmonious Passion*

Although no interaction effects of psychological safety were significant in the relationship between personality and passion, PS was the second strongest predictor of HP among students (after narcissism). However, when all three constructs were controlled for in a regression model, PS negated all relationships between traits and HP. Due to the low reliability of the PS and HP measures in the MTurk sample, similar relationships could not be tested here. The significance of PS as a predictor of HP among students suggests that creating a warm and welcoming environment among family members may be more essential than stable personality traits. Students who feel comfortable taking risks at home, approaching parents/family members with questions, and do not feel judged for their choices, are more likely to develop a healthy academic

passion. Conversely, students who feel external pressure from family to choose a particular major and cannot explore their interests might have trouble developing HP. In the workplace, it has been noted that PS is correlated to organizations with leaders who provide autonomy to employees and trusts their decisions (Frazier et al., 2017). Mageau et al. (2009) have also found that those in an environment that supports their autonomy are more likely to develop HP. These connections with autonomy support for both HP and PS may account for their strong positive association. This connection between psychological safety and harmonious passion does not appear shocking, but it must be investigated further in future studies.

### *Implications*

Understanding the relationship between personality and passion is critical to developing strategies that enhance HP and mitigate OP. By analyzing the relationship between the Big Five and passion, we can better grasp how broader traits relate to passion, thus developing the aforementioned strategies that are generalizable to a larger audience. Being mindful of all personality types, especially in a classroom setting, is critical to maintaining a positive classroom environment. It should also be noted that individuals fall on a scale of each personality trait, and it is not as if we have all of one trait and none of the other (Costa & Mcrae, 1992). From the Big Five, openness to experience predicted HP, while neuroticism predicted OP in the student sample. Educators might focus on creating tactics that stimulate curiosity and open-mindedness to help elicit openness to experience while also focusing on decreasing anxiety in the classroom to reduce the effects of the neurotic trait. Conscientiousness was also found to be a stronger predictor of OP than HP in students. Educators might work to decrease the overly competitive environment that can abound in undergraduate environments (Morgan & Bruin, 2010), to

discourage conscientious individuals to become obsessive in their school work. Professors can help build relationships among classmates and increase group work to mitigate competition

Investigating the relationship between the Dark Triad and passion was mostly exploratory in nature, so the actionable implications still require further research. Although narcissism predicted HP, this might have been due to high EQ narcissistic understanding that others value HP, so they present themselves as such (Smith et al., 2016). Because psychopathy and narcissism were strong predictors of OP among workers, these individuals will struggle to develop a healthy passion, even with individualized strategies that help increase OP. Results regarding the Dark Triad require further research to investigate how OP might be mitigated among those with these traits. But understanding that narcissism and psychopathy can predict OP among workers further proves that those with high levels of these traits should be avoided when hiring and appointing leadership.

Perhaps the most significant finding is that of psychological safety among family members. Its ability to strongly predict HP among students suggests that family greatly impacts how passion develops. Parents should focus on creating a psychologically safe environment where their child feels comfortable coming to them with questions and is unafraid to explore their interests or take risks. A parent being open and honest with their family may be a crucial first step, as the same is true for leadership within organizations. Beginning this feedback loop based on candor and open-mindedness is essential (Edmondson, 1999). Another essential step is for parents to avoid immediate punishment when they disagree with their child or they do something wrong. The same is true in the manager-employee relationship. Teaching why it was wrong and explaining what could be done differently develops learning and does not expunge future risk-taking.

### *Limitations and Future Directions*

Although the present study's findings are crucial and provide ample direction for future research, the study is not without limitations. The student sample consisted only of those from the University of Richmond, a small, private liberal arts school. There were also only 109 viable respondents and a sample of more power may have altered results. This, of course, can limit the generalizability of the findings. Future research should investigate whether these findings would be replicated in a larger university or even among middle or high school students. Smaller versions of the Dark Triad and Big Five trait measures were used in the present study, and future research might benefit from using trait scales with more items. Finally, the MTurk sample data was limited due to the low reliability of most measures. Although attention check questions were included throughout, it may have helped to add more complex versions rather than "Please choose strongly agree." It also may have helped to add more respondent requirements on Mturk. Future research should complete a similar study to the differences in results among students and employees that can be analyzed across all measures.

Future work must also continue exploring the relationship between various personality traits and passion to create a clearer picture of how passion develops. Research on the Dark Triad and the DMP should also continue to be explored, as this was the first study to assess their relationship. It would be helpful to see how it might differ across majors in universities and job types. A previous study notes that business majors are more likely to have Dark Triad traits in comparison to psychology majors (Vedel & Thomsen, 2017). Moreover, it would be interesting to see how passion plays a role here. Most notably, future research must focus on the relationship between psychological safety and the development of passion, especially among employees, which could not be explored here. Exploring PS in an educational environment and how that

contributes to passion would also be crucial. Psychological safety has also not been nearly explored enough among family members, and future research must investigate how PS can be created by parents and caregivers (Wanless, 2016), as this will be crucial to understanding its connection to HP, as well as other valuable intrapersonal characteristics.

### *Conclusion*

The present work provides a deeper insight into how personality and passion are intertwined. Understanding this relationship offers a small glimpse into how passion is developed. Personal factors encompass only one of three variables that build passion, the other two being the activity itself and the environment (Vallerand, 2015). Further research is needed to confirm the relationship between the Big Five and passion, as results are still varied. Research exploring more specific traits, such as the Dark Triad, will be needed to develop a clearer picture of how personal factors influence passion. Most importantly, other contextual factors should be investigated as predictors of passion, as in the present study, psychological safety negated all relationships between personality traits and passion. Our social environment is incredibly influential, and this work suggests that it may have more impact on passion than our more stable personality traits.

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