Passionately Motivated Reasoning: Biased Processing of Passion-Threatening Messages

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Abstract

Objective: When facing setbacks and obstacles, the dualistic model of passion outlines that obsessive passion, and not harmonious passion, will predict greater levels of defensiveness (Vallerand, 2015). Our aim was to determine if these passion dimensions predicted defensiveness in the same way when confronted with threatening messages targeting the decision to pursue a passion.

Method: Across four studies with passionate Facebook users, hockey fans, and runners (total $N = 763$), participants viewed messages giving reasons why their favorite activity should not be pursued. Participants either reported their desire to read the messages (Studies 1 and 2) or evaluated the messages after reading them (Studies 3 and 4).

Results: Harmonious passion consistently predicted higher levels of avoidance or negative evaluations of the messages. These responses were attenuated for participants who had previously affirmed an important value (Study 1), or who were told that they do not control the passions they pursue (Study 4).

Conclusions: Harmonious passion entails a sense of autonomy and control over activity engagement, which usually leads to non-defensive behavior. However, this sense of control may elicit more defensive responses from more harmoniously passionate individuals when the decision itself to pursue an activity is under attack.

Keywords: motivation; self-determination; coping; control; defensiveness

People often face adversity while pursuing their passions. According to much research on passion, however, the extent to which they respond with defensiveness and self-protective behavior depends on their predominant passion type. The dualistic model of passion (Vallerand, 2010, 2015) distinguishes between two varieties of passion: *harmonious passion* (HP) and *obsessive passion* (OP). When obstacles are confronted while pursuing a passion, it is OP, not HP, that has been shown to predict greater levels of defensive behavior including aggression (Donahue, Rip, & Vallerand, 2009; Philippe, Vallerand, Richer, Vallières, & Bergeron, 2009; Rip, Vallerand, & Lafrenière, 2012), appraisals of threat and uncontrollability (Schellenberg & Bailis, 2016), improving performance as a means of restoring one's self-concept (Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013a), and using coping efforts oriented toward avoidance and withdrawal (Rip, Fortin, & Vallerand, 2006; Schellenberg & Bailis, 2016; Schellenberg, Bailis, & Crocker, 2013; Schellenberg, Gaudreau, & Crocker, 2013). HP, on the other hand, has not predicted self-protective responses in any of the situations tested so far.

In this article, we demonstrate that there is an exception to this rule – that is, a situation in which HP, not OP, predicts greater defensive behavior. This exception occurs when people are confronted with reasons why their passion should not be pursued. The teenager with a passion for going on Facebook might hear that using Facebook can have negative consequences for his psychological well-being (Sifferlin, 2013). The office worker who is passionate for her job might read about the adverse health consequences linked with prolonged sedentary behavior (Lunau, 2012). The hockey player who dreams of becoming a professional might learn about the long-term consequences of concussions (Goodman, Gaetz, & Meichenbaum, 2001). Instead of blocking engagement in a passionate activity, these types of messages threaten the choice to pursue a passion in the first place. In the present research, we placed the decision to pursue a

passion under attack. Our guiding question was whether individuals with more HP would react more defensively to these situations and respond with more avoidance and negative evaluations of passion-threatening messages.

The Dualistic Model of Passion

In their seminal article introducing the dualistic model of passion, Vallerand and colleagues (2003, p. 757) defined passion as “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy”. After over a decade of research adopting the dualistic model, Vallerand (2015) refined this definition and identified seven dimensions that characterize passion and distinguish it from other related constructs, such as flow, grit, and intrinsic and extrinsic motivation: passion is directed toward specific entities or objects, including activities, objects, people, ideas, and causes; passion involves feelings of love toward the object; people find their passionate activities to be highly meaningful and valuable in their lives; passion is motivational rather than emotional in nature; passion leads people to strive toward the object with high levels of intensity and persistence; passionate activities become incorporated into people’s identities; and finally, passion is a dualistic construct.

It is this final element, the duality of passion, which has received the most attention in passion research. The dualistic model distinguishes between two forms of passion based on how the object of one’s passion is internalized into the self. An HP emerges when a passionate activity has been autonomously internalized into one’s identity, meaning that the activity is congruent with one’s personal values and is performed without any contingencies attached to it (Ryan & Deci, 2002; Vallerand, 2015). With HP, the activity is freely incorporated into one’s identity and the individual engages in the activity without any pressure to do so. This allows the passion to become an important, but not overpowering, component of the individual that is in

harmony with other aspects of the individual's life (Vallerand et al., 2003). An OP emerges when the activity has been internalized in a more controlled and less self-determined way, meaning that the activity is performed because of the external or internal contingencies that are connected with it (Ryan & Deci, 2002). With OP, the individual feels pressured to engage in the activity, which can lead to conflict between the passion activity and other life domains (Vallerand, 2015).

Challenging Passions

Passionate people spend a significant amount of time and energy engaging in their favorite activities, and are thus likely to encounter obstacles, threats, and adversity while pursuing them. The dualistic model posits that the impact of these setbacks on passionate individuals depends on whether their passion is more harmonious or obsessive. An OP is posited to predict increased defensiveness and self-protective responses when faced with threat (Vallerand, 2010), due to the dominant role that passions occupy in the identities of those with high levels of OP. This premise has been supported by research examining the extent to which highly obsessive people derive their identities from their passions (Mageau et al., 2009; Rip et al., 2012; Rousseau, Vallerand, Ratelle, Mageau, & Provencher, 2002), the self-relevant outcomes that are contingent on performance in the passion activity (Lafrenière, St-Louis, Vallerand, & Donahue, 2012; Mageau, Carpentier, & Vallerand, 2011), and the finding that OP predicts rigid persistence and preoccupation with an activity (Rip et al., 2006; Vallerand et al., 2003, Study 3). Given that the identities of highly obsessive people rely more strongly on their passion, these people should also be more inclined to engage in self-protective behavior in situations when passion-related goals are threatened. Although passionate activities are also important components of the identities of people with a predominantly HP, these people

occasionally let other pursuits come first and therefore should be inclined to respond flexibly rather than defensively when faced with adversity. The autonomous functioning that is characteristic of an HP allows people with high HP to be open to ongoing experiences and to face difficult times with flexibility, mindfulness, and desire to interpret them accurately (Hodgins & Knee, 2002; Vallerand, 2015). Therefore, unlike OP, HP should not predict defensive behavior when facing obstacles in a passion. Past research informed by the dualistic model has found consistently that only OP predicts defensive responses aimed at self-protection (e.g., Bélanger et al., 2013a; Donahue et al., 2009; Philippe, Vallerand, Richer et al., 2009; Rip et al., 2012; Vallerand, 2015).

We maintain, however, that obstacles to engagement are not the only threats that passionate people encounter, and other threats may be more likely to elicit defensive responses from people with high HP. A defining feature of HP, in contrast with OP, is control over the activity (Vallerand, 2015). With HP, the person is in control of the activity and can freely engage in or disengage from the activity at any point (Vallerand, 2010). There are no internal or external contingencies pushing or pulling the person to engage in a passion – highly harmonious people engage in their passion with a sense of volition and personal endorsement, and they experience their choice as emanating from their true, authentic self (Vallerand, 2015). Therefore, unlike what happens with obstacles to goal pursuit, information that challenges the decision to pursue a passion should pose a direct threat to people with high levels of HP. For example, if a message argues that engaging in an activity causes harm to the self or to others, the implication for those with strong levels of HP is they have freely chosen to engage in a potentially harmful activity. But with OP, control over activity engagement is forfeited to forces outside the self (Vallerand, 2010). The highly obsessive person, given a relative lack of control

over activity engagement, should feel that these types of messages, although potentially upsetting, do not require a defensive response since the choice to engage in the activity is beyond the person's control. Therefore, we anticipate that HP, not OP, will predict defensive responses to messages that challenge the decision to engage in a passion.

More specifically, in this research we predicted that HP toward an activity would predict greater use of the self-protective and defensive responses that people often use when confronted with threatening messages. The literature on motivated reasoning has revealed many ways of responding to new and negative information so as to maintain the rightness of a prior decision, belief, or attitude (e.g., Kunda, 1990; Nickerson, 1998). When initially exposed, people may selectively avoid contrary messages and preferentially attend to congenial ones (e.g., Hart et al., 2009; Sweeny, Melnyk, Miller, & Shepperd, 2010). When not avoided, people can still evaluate challenging messages with bias by being especially dismissive and skeptical of the contrary arguments contained within these messages (e.g., Ditto & Lopez, 1992; Kunda, 1990). By means of selective exposure and biased evaluation, people can successfully protect the self from information that poses a threat to their self-integrity (Sherman & Cohen, 2006).

Self-protective behavior in response to threatening messages is not always necessary. Self-affirmation theory predicts that challenging information can be rendered less threatening when the self has been previously affirmed or bolstered in other non-threatened domains (Steele, 1988; for a review, see Sherman & Cohen, 2006). By affirming other aspects of one's self-concept, one's "ego-protective system" can achieve the goal of maintaining one's overall conception of self-integrity (Steele, 1998, p. 267), without recourse to defensive cognitions and behavior. Self-affirmation thus allows people to be more open and receptive to threatening messages (Cohen, Aronson, & Steele, 2000; Howell & Shepperd, 2012; Sherman, Nelson, &

Steele, 2000). Furthermore, some researchers have proposed a distinction between self-transcendent and self-enhancement affirmations (Burson, Crocker, & Mischkowski, 2012; Crocker, Niiya, & Mischkowski, 2008). According to this view, by reminding people of “people or things beyond themselves that they care about and that are more important than temporary feelings of self-threat” (Crocker et al., 2008, p. 746), transcendent self-affirmations are more effective at attenuating bias than enhancement self-affirmations. If indeed HP is related to selective exposure and biased evaluation of negative messages, and for the reasons we have hypothesized here, then either type of self-affirmation (but especially transcendent self-affirmations) should further attenuate this relationship.

The Present Research

We conducted four studies to test our hypothesis that levels of HP toward an activity would predict greater levels of biased responses when confronted with messages that directly target the value or appropriateness of pursuing an activity. In all four studies, different groups of passionate people were presented with messages arguing that they should stop pursuing their passionate activity because it is harmful either to themselves or to others. Novel arguments were presented in each study in order to minimize the effects of pre-existing attitude differences (Kunda, 1987; Liberman & Chaiken, 1992). Studies 1 and 2 focused on people’s preferences to attend to or avoid passion-threatening messages, whereas Studies 3 and 4 focused on how people evaluated these messages.

Each study also included experimental conditions that tested hypothesized moderating and causal independent variables: Studies 1 and 3 included manipulations of self-enhancement and self-transcendent affirmations, Study 2 adopted an experimental design to test the causal relationship between HP and selective exposure bias, and Study 4 tested if the relationship

between HP and argument evaluations was dependent on (a) the relative strength of the argument, or (b) the extent to which people believe they are in control of the decision to pursue an activity. Also, to determine if the effects we observed were unique to HP, we explored if OP predicted biased responses and if the experimental manipulations moderated these effects. These exploratory analyses are reported in the supplementary file. We obtained ethics approval for each study prior to data collection, and all participants provided informed consent.

Study 1

Method

Participants. Participants were recruited from our institutional Introductory Psychology participant pool. Students were invited to participate if they had indicated on a pre-screening survey that they were passionate for using Facebook, which was defined as scoring higher than the mid-point of the scale on two items, both of which were scored on a scale from 1 (*not at all*) to 10 (*very much*): “I like going on Facebook” and “I spend a lot of time going on Facebook”. In total, 160 students participated in this study and were included in the final analysis (M age = 19.45, SD age = 3.35); five additional students participated but were excluded from the analysis because they did not complete the self-affirmation exercise properly. There were more female ($n = 114$) than male ($n = 43$) participants in the study (three participants did not report their gender), and most reported having a White/European ethnic background (56.9%), followed by Filipino (15.6%). Participants received research credit in exchange for participation.

Procedure. Students participated in small groups in a computer laboratory. Participants were told that they would be asked various questions about their opinions and attitudes toward Facebook, and would be asked to read and analyze an article about Facebook. First, participants completed a version of the Passion Scale (Vallerand et al., 2003) that was adapted for Facebook,

which consisted of three scales measuring HP (6 items; e.g., “Facebook is in harmony with the other activities in my life”; $\alpha = .84$), OP (6 items; e.g., “I have difficulties controlling my urge to go on Facebook”; $\alpha = .79$) and the passion criteria (4 items; e.g., “I like going on Facebook”; $\alpha = .78$). Items were rated on a scale from 1 (*not agree at all*) to 7 (*very strongly agree*).

Next, participants engaged in a standard self-affirmation manipulation procedure (e.g., McQueen & Klein, 2006; Sherman et al., 2000) that was adapted to assess differences between self-enhancement and self-transcendent value affirmations (Burson et al., 2012). Participants were randomly assigned into *self-transcendent*, *self-enhancement*, or *control* conditions.

Participants in the self-transcendent condition were presented with a list of six transcendent values and ranked them from most important to least important in their lives:

Empathy/compassion, being responsive and supportive to the needs of others as well as one’s own needs, creating or contributing to something larger than oneself, trust/openness, personal growth, and being in mutually supportive and caring relationships. Participants in the self-enhancement condition were presented with the same instructions as those in the self-transcendent condition, but were presented with values that were oriented toward self-enhancement: power/status, wealth/possessions, appearing confident/independent, physical attractiveness, popularity/admiration/prestige, and appearing intelligent/competent (Burson et al., 2012). After the value-ranking exercise, participants in the self-transcendent and self-enhancement conditions were presented with the value that they ranked as most important and wrote an essay for approximately 8 minutes about why this value was important and meaningful to them (Burson et al., 2012). Participants assigned to the control condition were not asked to rank any values, but instead wrote an essay about their daily routine.

Finally, after being reminded that they would be given an article to read and analyze,

participants were presented with a list of eight article titles along with one-sentence summaries and ranked each article based on how much they were hoping to read each one (Fischer, Schulz-Hardt, & Frey, 2008). These eight article titles are displayed in Table S1 in the supplementary file. Of the eight article titles, two represented articles encouraging people to continue using Facebook (e.g., “Why going on Facebook is a really good thing”), two represented articles discouraging people from using Facebook (e.g., “This is your brain on Facebook...and it doesn’t look good”), and four represented neutral, filler articles (e.g., “The role of advertisements on Facebook”). These eight article titles were selected from a larger pool of titles that were pretested separately. Students in this pilot study ($n = 39$) rated the pro-Facebook and anti-Facebook articles as being in favor of and opposed to engaging in Facebook, respectively, but being no different in levels of appeal or credibility. Participants in the current study were first asked to “drag-and-drop” the article titles in an order from most desirable to least desirable. The initial ordering of these articles was randomly determined by the computer program. The amount of bias toward pro-Facebook articles was computed by subtracting the average pro-Facebook rankings from the average anti-Facebook ratings (see Brannon, Tagler, & Eagly, 2007; Fischer, Greitemeyer, & Frey, 2008). Scores on this measure of ranking bias could range from -6, representing low levels of bias toward the pro-Facebook article, to +6, representing high levels of bias toward the pro-Facebook article ($M = -1.25$, $SD = 2.62$). Next, participants rated how much they would like to read each article on a scale from -4 (*I do NOT want to read this article*) to +4 (*I WANT to read this article*). Average scores for the pro- and anti-Facebook article ratings were computed, and the anti-Facebook average was subtracted from the pro-Facebook average to create a measure of rating bias. Scores on this measure of rating bias could range from -8 to +8, with higher scores again representing higher levels of bias toward the pro-Facebook article ($M =$

-1.00, $SD = 2.22$). Scores on both assessments of article bias were positively correlated ($r = .63$, $p < .01$), and were standardized and aggregated into a single measure of article bias. Participants were fully debriefed after they had completed all tasks.

Results and Discussion

We tested the unique and combined influences of HP and the self-affirmation manipulation in predicting the standardized measure of article bias using multiple regression. All regression and simple slope analyses were conducted using the PROCESS macro (version 2.15; Hayes, 2013) for SPSS (version 22). Regression models included predictors that were mean-centered and controlled for levels of OP. Because self-affirmation was a categorical variable with three levels (the self-transcendent, self-enhancement, and control groups), it was represented by two contrast codes that (a) compared the average of the two affirmation conditions to the control condition, thus testing the effect of self-affirmation compared to no self-affirmation, and (b) compared the self-transcendence group to the self-enhancement group, thus testing whether or not self-transcendent affirmations have a more prominent de-biasing effect compared to self-enhancement affirmations. These contrasts were specified in PROCESS using the Helmert coding option (Hayes, 2013). We obtained a significant interaction between HP and the contrast comparing the control group with both self-affirmation conditions, $b = -0.30$, $SE = 0.12$, 95% CI $[-0.54, -0.05]$, $p = .02$ (see Table S2). We interpreted this interaction by plotting simple slopes for the relationships between HP and article bias at each level of the self-affirmation manipulation (see Figure 1). High and low HP scores were plotted using scores that were one standard deviation above and below the mean, respectively. There was a strong relationship between HP and bias in the control group, $b = 0.51$, $SE = 0.11$, 95% CI $[0.30, 0.72]$, $p < .01$. However, this relationship weakened in both the self-transcendent, $b = 0.16$, $SE = 0.10$,

95% CI [-0.04, 0.36], $p = .11$, and self-enhancement conditions, $b = 0.27$, $SE = 0.11$, 95% CI [0.04, 0.49], $p = .02$. OP, which was included in the model as a covariate, predicted lower levels of bias, $b = -0.18$, $SE = 0.09$, 95% CI [-0.35, 0.00], $p = .05$.

These results support our hypothesis that HP predicts bias when presented with messages that argue that one should stop pursuing a passionate activity. When Facebook users were given the option, greater levels of HP predicted a greater desire to read articles that supported Facebook use and to avoid articles that argued that Facebook use was harmful. The magnitude of this effect was quite strong: In the control condition, as levels of HP increased from one standard deviation below the mean to one standard deviation above the mean, levels of bias increased by over one standard deviation. This relationship, however, was attenuated among those who had previously affirmed an important value in their life. This moderating effect was observed when either self-enhancement or self-transcendent values were affirmed. Although the attenuation effect appeared to be stronger in the self-transcendent condition (where the slope for HP was non-significant) compared to the self-enhancement condition, the contrast comparing degree of attenuation between these two conditions was not significant.

Study 2

Study 1, in line with the majority of passion research, treated both passion dimensions as observed variables and used correlational methods to assess relationships with outcomes. To test if specific varieties of passion have *causal* effects on these outcomes, researchers have started to manipulate specific varieties of passion as situational mindsets (e.g., Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013b; Schellenberg, Bailis, & Mosewich, 2016). The manipulation used in these procedures involves asking participants to write about a time when they engaged in their passion in either a harmonious or obsessive way (Bélanger et al., 2013b). Evidence for a

causal relationship between passion dimensions and an outcome can be obtained by randomly assigning participants to engage in either a harmonious, obsessive, or control exercise. The purpose of Study 2 was to build on the results from Study 1 by treating passion as a manipulated variable. Specifically, Study 2 was a replication of Study 1 with three main changes: (a) it was administered via an online survey; (b) it focused exclusively on the relationship between passion dimensions and selective exposure bias and did not include a self-affirmation exercise; and (c) rather than treat passion dimensions as measured variables, it included an exercise designed to activate distinct passion mindsets (Bélanger et al., 2013b).

Method

Participants. Participants were recruited using the same recruitment questions and inclusion criteria as used in Study 1. A total of 128 undergraduate Facebook users (97 females, 31 males; $M_{\text{age}} = 20.23$, $SD_{\text{age}} = 5.03$) participated in this study and received research credit for doing so. Most participants identified having a White/European ethnic background (50.8%), followed by Filipino (21.9%). Two additional students participated in this study but did not follow the study instructions and were removed from all analyses.

Procedure. Participants completed the online survey wherever they had access to the internet. First, participants were asked to engage in a brief writing exercise about their day-to-day experiences as a student. Participants were randomly assigned by the computer survey program to follow one of three sets of instructions. Those randomly assigned to the *HP condition* read the following instructions:

For this task, please write for 5 minutes about a time when Facebook was in harmony with other things that are part of you and you felt that Facebook allowed you to live a variety of experiences. Recall this event vividly and include as much details as you can

to relive the experience.

Those randomly assigned to the *OP condition* read the following instructions:

For this task, please write for 5 minutes about a time when you had difficulties controlling your urge to go on Facebook and you felt that Facebook was the only thing that really turned you on. Recall this event vividly and include as much details as you can to relive the experience.

Finally, those randomly assigned to the *control condition* wrote for 5 minutes about a time when they had to borrow a book from the library. These three sets of instructions were adapted directly from Bélanger et al. (2013b, Study 3).

After engaging in the writing exercise, participants completed the same article ranking and rating tasks as in Study 1: After being reminded that they would read and analyze an article related to Facebook, participants were presented with a list of eight Facebook-related article titles and ranked ($M = -0.54$, $SD = 2.82$) rated ($M = -0.50$, $SD = 2.48$) the extent to which they were hoping to read each one. The eight article titles that participants ranked and rated were identical to those presented in Study 1. Scores on this measure were once again positively correlated ($r = .71$, $p < .01$), and were again standardized and aggregated into a single measure of article bias.

Finally, in order to determine if the relationship between HP and article bias obtained in Study 1 could be replicated among those assigned to the control condition (see Bélanger et al., 2013b), participants completed the Passion Scale for using Facebook (HP $\alpha = .85$; OP $\alpha = .88$). Participants then reported their age, gender and ethnicity, and were fully debriefed.

Results and Discussion

The main analysis in this study tested if bias scores differed as a function of passion condition. A pre-planned contrast comparing the means of the HP ($M = 0.19$, 95% CI [-0.06,

0.44], $SD = 0.81$) and OP groups ($M = -0.24$, 95% CI $[-0.54, 0.07]$, $SD = 1.02$) revealed a significant difference, $t(125) = -2.18$, $p = .03$, $d = 0.47$.¹ The control group fell between these two ($M = 0.07$, 95% CI $[-0.23, 0.36]$, $SD = 0.92$), and no other pairwise differences were statistically significant. Participants randomly assigned to the HP condition, as compared to the OP condition, showed more biased article selections.

In addition, partial correlations were computed to determine if HP, as assessed with the Passion Scale at the end of the survey, predicted levels of bias among those assigned to the control condition only. This analysis revealed that HP, while controlling for OP, was positively associated with article bias ($r = .39$, $p = .01$). This result conceptually replicates the results obtained with the experimental manipulation in the current study, and also the regression-based analysis adopted in Study 1. We also found that OP, while controlling for HP, was negatively associated with article bias ($r = -.37$, $p = .02$), suggesting that OP predicts more openness to attending to passion-threatening messages. Altogether, these results support a reliable, replicable, and causal relationship between distinct passion types and selective exposure bias.

Study 3

The results from Studies 1 and 2 supported our hypothesis that HP positively predicts selective exposure – that is, a preference to avoid passion-threatening messages and instead attend to congenial messages that support engagement in a passion. However, passionate people do not always have the luxury of avoiding or ignoring passion-threatening information. The aim of Study 3 was to determine if the previously-observed positive association between HP and bias would extend to situations in which people were required to evaluate passion-threatening messages. As in Study 1, we tested the potential moderating role of self-affirmation. We also

¹ Cohen's d was calculated using a pooled standardizer.

extended this research to a new sample of passionate people: hockey fans.

Method

Participants. Students in Introductory Psychology were recruited based on their responses to one item on a pre-screening survey: “To what extent would you consider yourself a fan of the National Hockey League (NHL)?” Participants answered this question on a scale from 1 (*not at all*) to 10 (*very much so*). Students who gave a response that was at or above the midpoint on this scale (i.e., a score of 5 or greater) and who agreed to be contacted for future psychology studies were recruited for the current study. A total of 126 students participated in exchange for research credit (M age = 18.67, SD age = 1.43). There were more female ($n = 71$) than male ($n = 54$) participants (gender was not reported by one participant), and most reported having a White/European ethnic background (80.2%). An additional 14 students participated in this study but were not included in any analysis because they could not identify the main argument of the article that they were asked to read as part of this study ($n = 11$) or did not complete the self-affirmation exercise properly ($n = 3$).

Procedure. Study sessions occurred in small groups in a computer laboratory. Participants were told that they would be asked about their opinions and attitudes toward the NHL, and would also read and analyze an article about concussions in the NHL. All study materials were presented on a computer. First, participants completed a version of the Passion Scale (Vallerand et al., 2003) that was adapted for NHL hockey fans which consisted of three scales measuring HP (6 items; e.g., “Watching the NHL is in harmony with the other activities in my life”; $\alpha = .88$), OP (6 items; e.g., “I have difficulties controlling my urge to watch the NHL”; $\alpha = .86$) and the passion criteria (4 items; e.g., “I like watching the NHL”; $\alpha = .89$). Items were rated on a scale from 1 (*not agree at all*) to 7 (*very strongly agree*). Participants then engaged in

a self-affirmation procedure identical to that of Study 1.

Following the self-affirmation procedure, participants read and analyzed a fabricated article about concussions in the NHL. The article was titled “Current issues in sport: Are fans to blame for NHL concussions?” and was purportedly written by a university professor and published in an online edition of the *Ottawa Citizen* newspaper. The main argument of the article was that fan support contributes to the prevalence of concussions in the NHL. Specifically, the article argued that NHL executives have the power to make the game safer for players (for example, by abolishing fighting or increasing sanctions for aggressive play) but will not do so as long as television ratings, and therefore advertising revenue, remains stable. The article emphasized that the prevalence of concussions in the NHL could be reduced if hockey fans reduce, or even eliminate completely, the amount of NHL games that they watch on television. The article was intended to pose a threat to hockey fans, as it argued that they engage in an activity that is causing deleterious health outcomes for others. However, in order to minimize the effects of pre-existing attitudes (Lieberman & Chaiken, 1992), the article was designed to present a novel argument about an unfamiliar topic (i.e., concussions being caused by hockey fans). The article was fairly brief and contained 914 words.²

Next, participants reported their attitudes and opinions toward the article. On a scale ranging from 1 (*not at all*) to 9 (*very much so*), participants reported levels of skepticism (“How

² Participants were randomly assigned to receive one of two versions of this article. In the *high-relevance* condition, the article argued that television ratings contributed to violence and concussions in the NHL, and that the viewing habits of fans who were *under 25 years old* had a particularly strong effect (all participants in this study were under 25 years old). Participants in the *low-relevance* condition read the same article, except that the article argued that the viewing habits of fans who were *over 40 years old* had a particularly strong influence on the concussion rate in the NHL. This control group was included in order to test the hypothesis that harmonious passion was associated with biased evaluation of relevant information, and to rule out the alternate explanation that harmonious passion was generally associated with biased evaluation regardless of the threat that the information might pose. However, a manipulation check revealed that this manipulation did not affect any variable assessed in this study, including levels of skepticism or attitudes toward the article. Therefore, this manipulation was ignored when conducting the analyses.

skeptical did you feel while reading the article?") and positive attitudes toward the article ("To what extent do you agree that hockey fans' TV viewing habits influence concussions in the NHL?"; "How important do you think it is that NHL fans reduce the amount of NHL that they watch on television in order to influence the number of concussions in the NHL?"; "To what extent did you find the article convincing?"). These final three items were strongly correlated with one another (all $r_s > .62$, $p_s < .001$) and were aggregated into a single measure representing *article favorability* ($\alpha = .85$). Although levels of favorability toward the article and skepticism were significantly correlated with one another ($r = -.32$, $p < .01$), the size of the correlation suggested that both responses were sufficiently distinct to be considered unique outcome variables. We also conducted exploratory factors analyses (EFA) with all four items, using maximum likelihood extraction with direct oblimin rotation to allow for correlated factors (Costello & Osborne, 2005), which yielded a two-factor solution that accounted for 84% of the variance.³ All three items representing article favorability loaded strongly onto the first factor (all loadings $> .72$), and only the skepticism item loaded onto the second factor (loading = .67).

After participants had completed all aspects of this study, the debriefing procedure clarified the true purpose of this study and emphasized that the concussion article was fabricated.

Results and Discussion

Multiple regression was used to analyze the relationship between HP and the self-affirmation manipulation in predicting article favorability and skepticism. OP was once again included as a covariate, and self-affirmation was represented by the same contrasts from Study 1.

First, we conducted a regression analysis predicting the composite measure of article favorability from HP and self-affirmation conditions. HP was negatively associated with article

³ In all EFAs that we conducted, the number of extracted factors were determined by considering both eigenvalues and the scree test (Costello & Osborne, 2005).

favorability, $b = -0.52$, $SE = 0.19$, 95% CI $[-0.90, -0.14]$, $p = .01$. However, we found no significant relationship with OP or the contrasts representing the HP $\times$ self-affirmation interaction. Second, a similar analysis examined relationships with article skepticism, which we found to be positively associated with HP, $b = 0.61$, $SE = 0.20$, 95% CI $[0.20, 1.01]$, $p < .01$, and negatively associated with OP, $b = -0.58$, $SE = 0.29$, 95% CI $[-1.14, -0.02]$, $p = .04$. No significant interactions with self-affirmation were found (see Table S3).

As in Studies 1 and 2, the results of this study showed that when passionate people evaluate threatening messages about a passion, those who are more harmoniously passionate also treat these messages with more bias. When passionate hockey fans were presented with messages arguing that they indirectly contribute to concussions in the NHL, HP predicted greater levels of skepticism and lower levels of favorability. Unlike in Study 1, self-affirmation did not attenuate these associations. Although null findings must always be interpreted with caution, the question raised by these findings is whether the relationship between HP and biased evaluation is occasionally robust to conditions like self-affirmation that typically reduce biased responding.

Study 4

The results of Study 3 support the hypothesis that HP predicts more negative evaluations of passion-threatening messages. However, a negative evaluation might be reasonable in cases where the messages themselves are weak. Indeed, both theory (Vallerand, 2010, 2015) and evidence (Verner-Filion, Lafrenière, & Vallerand, 2012) connect HP with mindful, accurate, non-defensive activity engagement – features that one might expect to make individuals especially adept at perceiving the shortcomings of weak arguments but also especially open to persuasion by strong arguments. We therefore designed Study 4 to test if the relationship between HP and argument evaluations depended on the strength of the argument (consistent with

a mindfulness interpretation) or if HP would predict more negative evaluations for *both* strong and weak arguments (consistent with a defensiveness interpretation).

We also designed Study 4 to test if activity control played a role in the link between HP and argument evaluations. HP entails a sense of control over activity engagement (Vallerand, 2015), which, as we propose, explains why highly harmonious people respond with bias to suggestions that the activity is harmful and their pursuit of it should stop. In line with this proposal, learning that one does *not* control the decision of whether or not to pursue a passion should attenuate the relationship between HP and bias. We tested this prediction in Study 4.

Finally, whereas the previous studies relied on undergraduates who had passions for using Facebook and watching hockey, participants recruited for Study 4 were passionate for a different popular activity (running) and were recruited from both undergraduate and community samples. Focusing on a different activity also allowed us to replicate the effects obtained in Study 3 while also developing passion-threatening messages that varied in argument strength.

Method

Participants. We invited runners to complete an online survey about attitudes toward running-related issues. We recruited runners in three ways: (a) inviting students from our institutional Introductory Psychology participant pool who enjoyed running ($n = 204$), (b) writing posts advertising the study on online discussion forums devoted to runners ($n = 143$), and (c) displaying posters in a recreational facility on campus ($n = 2$). In exchange for participation, participants received either research credit or entry into a draw to win one of six \$25 gift cards to an online retailer. Although we invited only those who enjoyed running on a regular basis to participate, the online survey was completed by some who were either non-runners or who did not have a passion for running. To ensure that we analyzed responses from passionate runners,

we excluded an additional 204 respondents who completed the survey but whose average scores on the passion criteria scale of the Passion Scale were less than the scale mid-point (i.e., 4). We also excluded an additional 21 participants who indicated on an integrity-check item at the end of the survey that they did not answer the survey questions honestly. Our final sample consisted of 349 runners (187 females, 162 males; $M_{\text{age}} = 28.21$, $SD_{\text{age}} = 13.19$). Most participants (71.9%) identified as having a White/European ethnic background, followed by Filipino (10.0%).

Procedure. Participants completed the Passion Scale (Vallerand et al., 2003) which had been adapted for running (e.g., “Running is well integrated in my life”). Participants reported running on average 5.45 hours ($SD = 3.19$ hours) per week, and had run an average of 4.69 hours ($SD = 3.12$ hours) during the past seven days. HP ($M = 5.01$, $SD = 0.93$, $\alpha = .82$), OP ($M = 2.58$, $SD = 1.25$, $\alpha = .87$), and passion criteria ($M = 5.32$, $SD = 0.87$, $\alpha = .76$) scores were computed by averaging the scale items.

Next, participants viewed a page that served as our manipulation of activity control. Participants randomly assigned to the *no activity-control condition* viewed a page that informed them that, according to their responses on the previous page of the survey, they might have a passion for running. The page then presented the following information:

Did you know? Many people have a passion for a sport, exercise, or hobby in their lives, but they often do not know what caused them to be passionate for the activity in the first place. In fact, **many people say that their passions chose them!** The reason why people feel this way is likely because the activities people engage in are determined by many factors that people **do not control** such as genetics, culture, and early life development.

Participants were then instructed to continue to the next page of the online survey.

Participants randomly assigned to the *no-information condition* were only informed that they might have a passion for running, and then were instructed to continue with the survey.

Participants read four arguments about why people should stop running. The four arguments were presented in a random order and focused on reasons related to (a) the clothing that runners wear, (b) the contribution that runners make to society, (c) the impact that running has on the economy, and (d) the political impact of running. Participants were randomly assigned to see either *strong versions* or *weak versions* of all arguments. For example, the strong version of the argument related to clothing argued that most running clothing is manufactured in sweatshops that require laborers to work long hours in dangerous conditions for low wages, whereas the weak version argued that running clothing is very ugly and is not up-to-date with the latest fashion trends. These four arguments were selected from a larger pool of arguments that were presented to a separate sample of undergraduates ($n = 47$). Participants in this pilot study were randomly assigned to report their attitudes toward a series of either strong or weak arguments about why people should stop running. These participants rated the strong versions of the four arguments selected for the current study as being significantly more believable, likely to be true, convincing, and stronger overall compared to the weak versions. In the current study, participants assigned to view strong arguments also reported more favorable standardized ratings toward all four arguments ($M = 0.45$, $SD = 0.58$) compared to those who viewed the weak arguments ($M = -0.38$, $SD = 0.54$), $t(347) = -13.98$, $p < .01$, $d = 1.49$. The strong and weak versions of each argument are presented in the supplemental file (Table S4).

Participants were asked a series of questions following each argument. On a scale ranging from 1 (*not at all*) to 9 (*very much so*), participants reported the extent to which they agreed with the argument, were skeptical toward the argument, found the argument convincing,

and the likelihood that they thought the argument was true. Lastly, they rated the overall quality of the argument on a scale from 1 (*very poor*) to 10 (*excellent*). An EFA with all five items, using maximum likelihood extraction with direct oblimin rotation, was conducted for ratings of each argument. Each analysis yielded a one-factor solution that accounted for between 71% and 74% of the variance. We therefore computed an index of argument favorability by reverse-scoring the item assessing argument skepticism and aggregating the standardized item scores. These favorability ratings for each argument were, in turn, strongly correlated with each other (each $r > .52$), and results from an EFA yielded a one-factor solution that accounted for 67% of the variance (all loadings $> .73$). Therefore, we aggregated favorability ratings for each argument into a single measure of overall argument favorability ($M = 0.00$, $SD = 0.70$, $\alpha = .84$), with higher scores representing more favorable ratings of the passion-threatening arguments. At the end of the survey, participants were fully debriefed about the purpose of the study and the fact that some of the information presented in the arguments was untrue.

Results and Discussion

Our first aim was to replicate the effects obtained in the previous studies by analyzing the relationship between HP and argument favorability among participants who were not given any information regarding passion control. A regression analysis with those assigned to the no-information condition ($n = 174$) revealed a significant negative relationship between HP and argument favorability, $b = -0.24$, $SE = 0.05$, 95% CI $[-0.35, -0.13]$, $p < .01$. OP was entered as a covariate in the regression model but did not significantly predict argument favorability, $b = 0.06$, $SE = 0.04$, 95% CI $[-0.03, 0.14]$, $p = .18$. These findings show again that HP predicts more negative attitudes toward messages that challenge the decision to pursue a passionate activity, in a new and broader sample, with new messages, toward a different activity.

Next, we tested whether this negative association between HP and argument favorability among those in the no-information condition depended on the relative strength of the arguments. A moderation analysis, with OP entered as a covariate, did not reveal any evidence that HP interacted with argument strength, $b = 0.04$, $SE = 0.09$, 95% CI [-0.13, 0.21], $p = .64$. OP predicted higher levels of argument favorability, $b = 0.10$, $SE = 0.04$, 95% CI [0.04, 0.17], $p < .01$ (see Table S5). Simple slope analyses indicated that HP predicted lower levels of argument favorability for both weak ($b = -0.18$, $SE = 0.06$, 95% CI [-0.30, 0.06], $p < .01$) and strong arguments ($b = -0.14$, $SE = 0.06$, 95% CI [-0.27, 0.018], $p = .03$). Figure 2 shows the relationship between HP and argument evaluations for both weak and strong arguments. This result fails to support the alternative interpretation of our previous findings based on mindfulness. Rather than being especially sensitive to the relative strength of the arguments, and thus more approving or disapproving of strong and weak arguments in turn, HP predicted lower levels of article favorability toward both strong and weak arguments.

Our final aim was to test if the relationship between HP and argument favorability was attenuated among those who had been informed that they had no control over the passions they pursue. We ignored the argument strength manipulation in this model because it did not moderate the effects of HP in the previous analysis. In line with this prediction, we obtained a significant interaction between HP and activity control, $b = -0.16$, $SE = 0.08$, 95% CI [-0.31, -0.01], $p = .04$. OP, which was entered as a covariate, predicted higher levels of argument favorability, $b = 0.14$, $SE = 0.03$, 95% CI [0.08, 0.20], $p < .01$ (see Table S6). Simple slope analyses revealed a significant negative association between HP and argument favorability in the no-information condition, $b = -0.27$, $SE = 0.05$, 95% CI [-0.37, -0.16], $p < .01$, which was attenuated in the no activity-control condition, $b = -0.11$, $SE = 0.06$, 95% CI [-0.22, 0.00], $p =$

.05. These slopes are displayed in Figure 3. This evidence of moderation suggests activity control as a potential explanatory factor to account for the increased bias shown by those with more HP in response to passion-threatening messages. By relieving participants' sense of responsibility over the decision to pursue a passion, the present procedures reduced the extent to which HP predicted negative argument evaluations.⁴

General Discussion

People who successfully pursue their passions in life will have overcome many threats along the way. When threats arise, previous research on the dualistic model of passion links OP with defensiveness and HP with more open and non-defensive responses (Vallerand, 2010, 2015). There are, however, various types of threats that people can face (Leary, Terry, Allen, & Tate, 2009), and the current research started from the premise that there are at least two distinct kinds of threat that passionate individuals encounter: those that target the pursuit of passion-related goals, and those that target the choice to pursue a particular passion in the first place. We focused on the latter type and presented participants with information that called into question the correctness of their decisions to pursue a passion. Participants higher in HP consistently showed more biased responses than those lower in HP. We replicated these findings in four studies with passionate Facebook users, hockey fans, and runners toward both their desire to read the messages and their evaluations of them. These effects were unique to HP and not simply indicative of participants' degree of motivation: All analyses were conducted by either

⁴ For exploratory purposes with the entire sample, including those who were excluded from the main analysis due to low passion scores, we found a negative correlation between levels of passion toward running, as assessed with the passion criteria, and favorability ratings, $r = -.21, p < .01$. This finding replicates past research showing that skepticism and defensive processing depend on the extent to which a threatening message is personally relevant (e.g., Liberman & Chaiken, 1992). But in addition to the distinction between relevant and irrelevant issues, we show in our main analysis and in the other studies reported here that responses to threatening messages in a passionate and therefore highly personally relevant domain can be further distinguished based on one's predominant passion type.

manipulating passion dimensions as situational mindsets, or statistically controlling for OP in regression models (see also the exploratory analyses with OP reported in the supplementary file).

The finding that HP predicts biased treatment of passion-related messages seems at odds with previous research on the topic. Previous research, however, has focused exclusively on information, obstacles, or scenarios that threaten the pursuit of passion-related goals and not the choice to pursue a passion in the first place. For example, previous research has studied how passionate basketball players reacted after imagining themselves being intentionally fouled by an opponent (Donahue et al., 2009), how passionate drivers behaved in a driving simulator in which they were repeatedly obstructed by another vehicle (Philippe, Vallerand, Richer et al., 2009), how passionate exercisers reacted after reflecting on their personal weaknesses with exercise and how these weaknesses impeded them from achieving their goals (Bélanger et al., 2013a), how passionate NHL fans coped during a period of time when the NHL was “locked out” and no games were being shown on television (Schellenberg, Bailis, et al., 2013), how passionate volleyball players managed demands and challenges during training (Schellenberg, Gaudreau, et al., 2013), and how passionate dancers coped with injuries (Rip et al., 2006). In all cases, participants reflected on or directly experienced obstacles that obstructed them from pursuing or achieving a passion-related goal. And in all cases, OP predicted more defensive responses, such as aggressive intentions and behavior (Donahue et al., 2009; Philippe, Vallerand, Richer et al., 2009), hand-grip strength (Bélanger et al., 2013a), threat perceptions (Schellenberg & Bailis, 2016; Schellenberg, Bailis, et al., 2013) and avoidance behavior (Rip et al., 2006; Schellenberg, Bailis, et al., 2013; Schellenberg, Gaudreau, et al., 2013). Evidence clearly supports the link between OP and defensiveness in response to setbacks or obstacles in the pursuit of a passion.

The threats presented to participants in the current research, however, were different from

those examined in these previous studies. Rather than present an impediment to passion-related goal achievement, this research presented participants with moral concern about the activity itself, or more specifically, messages suggesting that they were pursuing an activity that hurt themselves or others. Because such information targets the selection of an activity, rather than the ability or opportunity to engage in it, this type of threat strikes closer to the heart of those whose passion is more harmonious rather than obsessive. People's sense of choice (i.e., control, autonomy, and personal volition) is the foundation of harmoniously passionate activity engagement (Vallerand, 2010, 2015). Therefore, we expected and found in all four studies that people with a predominant HP would be especially threatened by and respond with bias to messages asserting that they had made a poor activity choice.

Study 4 tested this prediction most directly. If perceptions of activity control do play a role in the relationship between HP and biased responding, then this effect should be reduced if people are somehow relieved of this sense of responsibility over their choice to pursue their passionate activity. Accordingly, we tested this prediction by informing some participants that they in fact do *not* control the passions they pursue in life. The relationship between HP and biased evaluations of passion-threatening messages was significantly attenuated among those who were presented with this information, as compared with those given no information.

In this research, we focused on HP and did not form any hypotheses regarding OP. No consistent findings emerged with OP, but the few significant effects we did obtain suggest that OP might predict more openness to the types of threatening messages examined here. OP, when analyzed as a control variable, predicted less selective exposure bias (Study 1) and article skepticism (Study 3). Also, in Study 2, participants in an obsessively passionate mindset reported less selective exposure bias than those in a harmoniously passionate mindset and,

among those in the control condition, OP predicted lower levels of bias. Moreover, the exploratory analyses from Study 4 revealed that OP predicted greater argument favorability, but only when presented with weak arguments (see the supplementary file). OP is characterized by a relative lack of control over the decision to pursue a passion (Vallerand, 2015), meaning that people with strong levels of OP may not feel at fault when presented with messages arguing that they are engaging in potentially harmful activities. Those with strong levels of OP may also be more aware of the downsides of pursuing a passion (Vallerand, 2015) and thus more accepting of messages that fit with their typical experiences with their passionate activities and identify novel problems with them. Indeed, the novelty of the weak arguments presented in Study 4 may explain why OP predicted greater levels of favorability toward them. While speculative, these predictions about OP may be worthy of investigation in future research.

A lingering question is whether the dependent measures we used – i.e., message avoidance and negative evaluation – permit clear inferences of defensiveness behind participants' responses. Indeed, we formed our hypotheses and tested moderating variables based on a defensiveness interpretation, and at least two aspects of the present findings provide support for this position. First, in Study 1, we found that affirming an important life value attenuated the relationship between HP and selective exposure to passion-threatening messages. Second, in Study 4, we found that HP predicted less favorable evaluations of both strong and weak arguments. Neither of these findings should have occurred if defensiveness is not the reason why HP predicts avoidance or skepticism of passion-threatening messages. Moreover, the moderating effect observed in Study 4 supported the hypothesized source behind this defensiveness – that is, a sense of responsibility over the decision to pursue a passionate activity. But there are other potential processes that could explain why HP predicted more bias in this

research that do not involve ego-defense. For instance, the messages presented to participants could have violated the expectations of those with high HP, who typically enjoy positive outcomes from pursuing their favorite activities (Vallerand, 2015). This meaning violation (Proulx & Inzlicht, 2012) could have been the driving force that resulted in efforts to discount the messages and restore meaning. Another interpretation is that people with high HP avoid and negatively evaluate passion-threatening messages in order to maintain their positive feelings toward the activity (e.g., Isen, 2008), or because their positive feelings lead them to process messages in a less systematic way (e.g., Bless, Bohner, Schwarz, & Strack, 1990). Therefore, although HP consistently predicted greater bias toward passion-threatening messages in the current research, more evidence is needed to support the defensiveness interpretation of this bias and rule out competing explanations.

Conclusion

Most people can identify at least one passionate activity in their lives. At times, however, these passions are challenged by messages that question whether or not people should be pursuing them at all. Typically, OP, and not HP, has been shown to predict defensive and self-protective responses (Vallerand, 2015). However, when facing threats to activity selection, this research revealed an opposite pattern. Across four studies using both correlational and experimental methods, HP predicted stronger inclinations to avoid and negatively evaluate messages arguing that one should stop pursuing a passion. An HP entails a sense of autonomy and control. We propose that this foundation of activity engagement makes people vulnerable to responding defensively when the moral value of their choice of a passion is threatened. By understanding what makes each side of the duality of passion vulnerable, we can gain a more complete picture of how both passion dimensions operate when faced with adversity.

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Figure 1

Figure 2

Figure 3

Supplementary File

Part I: Supplementary Tables

Table S1: Study 1 - Article Titles and Summaries

“Why going on Facebook is a really good thing”

This article presents scientific evidence that finds that going on Facebook can enhance your health and happiness.

“The inspiring effect of Facebook”

This article discusses why going on Facebook has an inspirational effect that can contribute to creativity.

“Facebook makes people less happy”

This article presents scientific evidence that finds that going on Facebook reduces levels of happiness and overall life satisfaction.

“This is your brain on Facebook...and it doesn't look good”

This article explains how going on Facebook reduces brain functioning and mental performance.

“Facebook usage over the past 5 years”

This article presents data from a recent survey of Canadians about their Facebook usage over the past 5 years.

“The role of advertisements on Facebook”

This article outlines why advertisements are needed on Facebook and how advertisements make their way onto Facebook.

“The new media: Where does Facebook stand?”

This article discusses the role of Facebook in relation to other more traditional media sources, such as television.

“The Facebook effect: How Facebook influences our economy”

This article outlines how our economy is influenced by Facebook activity.

Note. The first two article titles represented pro-Facebook titles, the next two represented anti-Facebook titles, and the final four represented titles that were neutral towards Facebook. Articles were presented to participants in a random order.

Table S2: Study 1 – Regression Analysis Predicting Article Bias

Predictor	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	0.313	0.070	<.001	[0.176, 0.451]
OP	-0.178	0.089	.048	[-0.354, -0.002]
C1: Control vs. Both SA Groups	0.007	0.141	.962	[-0.272, 0.286]
C2: ST vs. SE Groups	-0.117	0.164	.475	[-0.440, 0.206]
HP × C1	-0.297	0.123	.017	[-0.541, -0.054]
HP × C2	0.102	0.142	.472	[-0.178, 0.382]

Note. SA = Self-affirmation. ST = Self-transcendent. SE = Self-enhancement. C1 = Contrast 1. C2 = Contrast 2. Harmonious and obsessive passion were mean-centered. HP = harmonious passion. OP = obsessive passion.

Table S3: Study 3 – Regression Analysis Predicting Article Favorability and Skepticism

Predictor	Article Favorability				Article Skepticism			
	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	-0.519	0.190	.007	[-0.896, -0.142]	0.607	0.204	.004	[0.203, 1.011]
OP	0.228	0.266	.393	[-0.298, 0.753]	-0.580	0.284	.044	[-1.144, -0.017]
C1: Control vs. Both SA Groups	-0.143	0.378	.707	[-0.892, 0.607]	0.021	0.405	.959	[-0.782, 0.823]
C2: ST vs. SE Groups	-0.169	0.429	.694	[-1.017, 0.680]	0.451	0.459	.327	[-0.457, 1.360]
HP × C1	0.138	0.328	.676	[-0.511, 0.786]	-0.036	0.351	.919	[-0.731, 0.659]
HP × C2	-0.150	0.320	.640	[-0.785, 0.484]	0.039	0.343	.911	[-0.641, 0.718]

Note. SA = Self-affirmation. ST = Self-transcendent. SE = Self-enhancement. C1 = Contrast 1. C2 = Contrast 2. Harmonious and obsessive passion were mean-centered. HP = harmonious passion. OP = obsessive passion.

Table S4: Study 4 - Strong and Weak Arguments

<u>Strong Arguments</u>	<u>Weak Arguments</u>
<p>Argument #1: The Clothing</p> <p>Most running clothing is manufactured in clothing factories that require manual labourers, many of whom are children, to work long hours in dangerous conditions for low wages. In fact, 77% of the apparel manufactured in these so-called “sweatshops” are designed specifically for runners, and the volume of running shoes and clothing that is produced in these factories has increased by over 48% in the past decade.</p>	<p>Argument #1: The Clothing</p> <p>Most running clothing is snug and can be quite revealing, which makes people who don’t run feel badly about their own bodies. Running clothing is also very ugly and is not up-to-date with the latest fashion trends.</p>
<p>Argument #2: Social Contribution</p> <p>Although most organized races support local charities, runners actually donate <i>less</i> to charity than non-runners. On average, only 8% of the funds raised by runners goes to local charities, with the rest being needed to finance the race itself. People who do not run in these races are able to see all of their donation go directly to charity.</p>	<p>Argument #2: Social Contribution</p> <p>Running is such a tiring and time-consuming activity that it can cause people to spend less time volunteering or donating to charity. Runners also spend most of their disposable income on registration fees for races, meaning they have less money to donate to charities.</p>
<p>Argument #3: Economic Impact</p> <p>Organized races, such as marathons, half marathons, relays and 10Ks, often take place in major cities. However, with the cost of police, emergency medical services, and economic losses that occur when you shut down city streets, organized races cost taxpayers on average \$1.5 million per race. Most major cities host two large races per year, meaning that these losses can really add up.</p>	<p>Argument #3: Economic Impact</p> <p>Running is such a tiring and time-consuming activity that it can cause people to have less energy and motivation for their careers. This means that runners are less ambitious and make less of a contribution to our economy.</p>
<p>Argument #4: Political Impact</p> <p>Approximately 60% of runners use some type of running technology such as heart rate sensors or GPS monitors. However, this technology is manufactured using “conflict minerals” such as tin and tungsten, the mining of which finances militias and rebel groups in eastern Congo and other parts of the world. Conflict minerals are particularly important when building these types of running devices in order to keep them small and lightweight.</p>	<p>Argument #4: Political Impact</p> <p>Running gives North Americans a bad reputation. While people living in other parts of the world struggle to find enough food to eat each day, people in North America are able to run for no apparent reason other than to prevent themselves from becoming overweight. Running is a way for North Americans to boast about the amount of food they have to eat.</p>

Note. Participants were randomly assigned to see either strong or weak versions of all arguments. The arguments were presented in a random order.

Table S5: Study 4 – Regression Analysis Predicting Argument Favorability from Passion Dimensions, Argument Strength Condition, and the Harmonious Passion $\times$ Argument Strength Interaction.

Predictor	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	-0.182	0.061	.003	[-0.303, -0.062]
OP	0.104	0.035	.003	[0.036, 0.173]
Argument Strength Condition	0.818	0.082	<.001	[0.655, 0.980]
HP $\times$ Argument Strength	0.041	0.086	.638	[-0.130, 0.211]

Note. Argument Strength Condition was coded as either 0 (weak argument) or 1 (strong argument). Harmonious and obsessive passion were mean-centered. HP = harmonious passion. OP = obsessive passion.

Table S6: Study 4 – Regression Analysis Predicting Argument Favorability from Passion Dimensions, Activity-Control Condition, and the Harmonious Passion $\times$ Activity-Control Interaction.

Predictor	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	-0.110	0.056	.051	[-0.219, 0.000]
OP	0.139	0.030	<.001	[0.081, 0.198]
Activity-Control Condition	-0.040	0.071	.577	[-0.180, 0.100]
HP $\times$ Activity-Control	-0.158	0.076	.039	[-0.308, -0.008]

Note. Activity-Control Condition was coded as either 0 (no activity-control condition) or 1 (no information condition). Harmonious and obsessive passion were mean-centered. HP = harmonious passion. OP = obsessive passion.

Part II: Exploratory Analyses

Study 1 – Exploratory Analyses

We conducted an exploratory regression analysis to test if OP interacted with the self-affirmation manipulation to predict article bias. Self-affirmation was represented by the same contrast codes described in the main text, and HP was included as a covariate. The results indicated that OP did not interact with the self-affirmation manipulation (see Table S7). The only significant effect in this analysis was a positive association between HP and bias, $b = 0.31$, $SE = 0.07$, 95% CI [0.17, 0.45], $p < .01$.

Table S7: Study 1 – Exploratory Regression Analysis Predicting Article Bias

Predictor	b	SE	p	95% CI
HP	0.308	0.071	<.001	[0.167, 0.448]
OP	-0.179	0.092	.054	[-0.361, 0.003]
C1: Control vs. Both SA Groups	0.021	0.145	.885	[-0.265, 0.307]
C2: ST vs. SE Groups	-0.121	0.167	.469	[-0.452, 0.209]
OP $\times$ C1	0.043	0.167	.799	[-0.287, 0.373]
OP $\times$ C2	0.063	0.182	.731	[-0.296, 0.422]

Note. SA = Self-affirmation. ST = Self-transcendent. SE = Self-enhancement. C1 = Contrast 1. C2 = Contrast 2. HP = harmonious passion. OP = obsessive passion.

Study 3 – Exploratory Analyses

We conducted exploratory regression analyses to test if OP interacted with the self-affirmation manipulation to predict article favorability and skepticism. Self-affirmation was represented by the same contrast codes used in Study 1, and HP was included as a covariate. There were no main or interactive effects with OP when predicting either article favorability or

article skepticism; the only significant effect in both analyses was the main effect of HP which negatively predicted article favorability ($b = -0.51$, $SE = 0.19$, 95% CI $[-0.89, -0.13]$, $p < .01$), and positively predicted article skepticism ($b = 0.58$, $SE = 0.20$, 95% CI $[0.18, 0.98]$, $p < .01$; see Table S8).

Table S8: Study 3 – Exploratory Regression Analysis Predicting Article Favorability and Skepticism

Predictor	Article Favorability				Article Skepticism			
	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	-0.513	0.191	.008	[-0.891, -0.134]	0.579	0.204	.005	[0.175, 0.982]
OP	0.244	0.296	.411	[-0.342, 0.830]	-0.433	0.315	.173	[-1.057, 0.192]
C1: Control vs. Both SA Groups	-0.128	0.384	.740	[-0.888, 0.632]	-0.011	0.409	.978	[-0.821, 0.799]
C2: ST vs. SE Groups	-0.170	0.430	.694	[-1.020, 0.681]	0.459	0.458	.318	[-0.448, 1.366]
OP × C1	0.050	0.564	.929	[-1.066, 1.166]	-0.467	0.601	.438	[-1.656, 0.722]
OP × C2	-0.184	0.426	.666	[-1.027, 0.659]	-0.241	0.454	.596	[-1.139, 0.657]

Note. SA = Self-affirmation. ST = Self-transcendent. SE = Self-enhancement. C1 = Contrast 1. C2 = Contrast 2. HP = harmonious passion. OP = obsessive passion.

Study 4 – Exploratory Analyses

First, we explored if argument strength moderated the relationship between OP and argument favorability among those in the no-information condition. We obtained a significant interaction between OP and argument strength, $b = -0.13$, $SE = 0.07$, 95% CI $[-0.27, 0.00]$, $p = .05$. HP, which was entered as a covariate, predicted lower levels of argument favorability, $b = -0.16$, $SE = 0.04$, 95% CI $[-0.25, -0.08]$, $p < .01$ (see Table S9). Simple slope analyses revealed that OP predicted higher argument favorability in the weak argument condition, $b = 0.16$, $SE = 0.05$, 95% CI $[0.07, 0.25]$, $p < .01$, but not in the strong argument condition, $b = 0.03$, $SE = 0.05$, 95% CI $[-0.07, 0.13]$, $p = .58$. Although not expected, this pattern may mean that OP is most

predictive of positive evaluations of arguments that are more novel and unusual. We speculate more on the effects found with OP in this research as part of the General Discussion.

Table S9: Study 4 – Exploratory Regression Analysis Predicting Argument Favorability

Predictor	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	-0.162	0.044	<.001	[-0.248, -0.075]
OP	0.162	0.045	<.001	[0.073, 0.250]
Argument Strength Condition	0.829	0.082	<.001	[0.668, 0.990]
OP × Argument Strength	-0.133	0.067	.050	[-0.266, 0.000]

Note. Argument Strength Condition was coded as either 0 (weak argument) or 1 (strong argument). Harmonious and obsessive passion were mean-centered. HP = harmonious passion. OP = obsessive passion.

Finally, we repeated these analyses to explore if the activity-control manipulation moderated the relationship between OP and argument favorability. Unlike the analysis with HP, we included the main and interactive effects of the argument strength manipulation because it moderated the effects found in the earlier analysis. We did not find any main or interactive effects with the activity-control manipulation; the only significant effect found in this analysis was the interaction between OP and the manipulation of argument strength, $b = -0.12$, $SE = 0.06$, 95% CI [-0.25, 0.00], $p = .04$ (see Table S10). Another way to interpret this analysis is that the OP × Argument Strength interaction effect found in the previous analysis (Table S9) did not differ between the no information and no activity-control conditions.

Table S10: Study 4 – Exploratory Regression Analysis Predicting Argument Favorability

Predictor	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
HP	-0.162	0.031	<.001	[-0.223, -0.101]
OP	0.249	0.043	<.001	[0.164, 0.334]
Argument Strength Condition	0.797	0.079	<.001	[0.641, 0.952]
Activity-Control Condition	-0.089	0.077	.250	[0.241, 0.063]
Argument Strength × Activity-Control	0.032	0.113	.776	[-0.190, 0.254]
OP × Argument Strength	-0.124	0.062	.044	[-0.245, -0.003]
OP × Activity-Control	-0.087	0.061	.155	[-0.208, 0.033]
OP × Argument Strength × Activity-Control	-0.009	0.091	.924	[-0.188, 0.170]

Note. Argument Strength Condition was coded as either 0 (weak argument) or 1 (strong argument). Activity-Control Condition was coded as either 0 (no activity-control condition) or 1 (no information condition). Harmonious and obsessive passion were mean-centered. HP = harmonious passion. OP = obsessive passion.