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The role of passion and support perceptions in changing burnout: a Johnson-Neyman approach

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Abstract

This study explored the relationship between obsessive and harmonious passion for work and burnout, as well as the moderating roles of perceived supervisor support and perceived co-worker support. A longitudinal, 3-wave study was conducted among 1,263 members of a large Norwegian workers' union across a 10-month time span. Harmonious passion for work was related to a decrease in exhaustion and cynicism over time, whereas obsessive passion for work was stably and positively related to exhaustion and cynicism. Furthermore, we suggested that a situational contingency in the form of support perceptions may reduce the negative outcome of obsessive passion but find that this attenuation may depend on the level of the obsessive passion. By applying the Johnson-Neyman statistical technique, we showed that the level of obsessive passion is important in understanding when a supporting environment is actually helpful in protecting against burnout. We still recommend careful selection of co-workers who are genuinely caring and considerate of others, as well as facilitating good relationships at work. However, we also discuss how high levels of obsessive passion might prevent certain employees from gaining from the effects of co-worker support.

Keywords: harmonious and obsessive passion, burnout, perceived supervisor support, perceived co-worker support, longitudinal analyses

The role of passion and support perceptions in changing burnout: a Johnson-Neyman approach

Burnout is a type of strain emanating from prolonged exposure to chronic, job-related stressors (Maslach, Schaufeli, & Leiter, 2001). It was first characterized by emotional exhaustion, cynicism, and reduced professional efficacy, but recent research suggests that exhaustion and cynicism are the key indicators of burnout and that a decrease in professional efficacy could be considered an outcome of these symptoms (Boersma & Lindblom, 2009; Brauchli, Schaufeli, Jenny, Füllemann, & Bauer, 2013; Maslach, 1982).

Burnout has negative consequences for both employees and organizations, which include decreased job performance, higher turnover rates, and poor mental health (for an overview, see Halbesleben & Buckley, 2004; Leiter et al., 2013). Given its detrimental consequences, antecedents of burnout have received substantial research attention (cf. Alarcon, 2011; Swider & Zimmerman, 2010).

In the literature, there has usually been an underlying assumption that individuals who burn out were initially quite involved in their work and that the emotional or physical demands of modern work may gradually erode this involvement in the job and, in turn, lead to burnout (Cherniss, 1980; Maslach & Leiter, 1997). Recent approaches to work involvement has provided a more nuanced approach to this assumption (Birkeland & Buch, 2015; Houlfort, Philippe, Vallerand, & Ménard, 2014). For example, the passion for work model has shown promising results as a theoretical framework for capturing job involvement that is either deteriorating or progressive (e.g. Birkeland & Buch, 2015; Vallerand, Paquet, Philippe, & Charest, 2010).

Passion for work is defined as a strong inclination toward work that one loves and considers highly important, that is an important part of one's self-concept, and in which one invests significant amounts of time and energy (Forest et al., 2012). The passion model

suggests that a person can either be in charge of his or her involvement, referred to as harmonious passion (HP), or lose control of it, referred to as obsessive passion (OP, Vallerand et al., 2003). These two processes thus comprise the progressive and the deteriorating job involvement, respectively. Extant research has generally shown HP to be negatively related to burnout, while OP has generally been found to be positively related to burnout (e.g. Birkeland & Buch, 2015). Unfortunately, most of the studies that have investigated OP and HP for work are predominantly cross-sectional or prospective, including the research on passion for work and burnout (for an overview, see Curran, Hill, Appleton, Vallerand, & Standage, 2015). As burnout may change in response to both personality and attitudes (e.g. Alarcon, 2011; Makikangas, Kinnunen, Feldt, & Schaufeli, 2016), thorough knowledge of the source of such change is important, particularly if the source can either increase or decrease burnout symptoms over time. In this paper, we thus investigate whether passion for work relate to change in burnout levels. By doing so we intend to empirically contribute to the field of organizational psychology in general (e.g. Casper, Eby, Bordeaux, Lockwood, & Lambert, 2007), and the field of passion for work in particular (Ho, Wong, & Lee, 2011; Perrewé, Hochwarter, Ferris, McAllister, & Harris, 2014) by examining the stability of the relationship between passion and burnout.

Our second intended contribution is also to the passion for work literature. As numerous studies have found a positive link between OP and burnout, calls to consider ways in which to prevent the depletion of negative passion for work has been made (Perrewé et al., 2014). Unfortunately, organizations may lack the means or resources to conduct interventions that could change the level of OP and thus we investigate alternatives for dampening its consequences. The research on organizational support has proved a relevant avenue to look for buffers on burnout (Bakker, Demerouti, & Verbeke, 2004; Xanthopoulou et al., 2007), and in this study we argue that having supervisors and co-workers who care for and support

individuals (Chiaburu & Harrison, 2008; Eisenberger, Huntington, Hutchison, & Sowa, 1986) might be particularly important. By building on the conservation of resources theory (Halbesleben, 2006; Hobfoll, 1989) we investigate the degrees to which perceived supervisor support and perceived co-worker support buffer the relationship between OP and burnout. We suggest that perceived supervisor support and perceived co-worker support may attenuate the OP–burnout relationship by meeting socioemotional needs and providing other resources to help individuals cope better with their OP.

Passion for Work and Burnout

Based on self-determination theory (Gagne & Deci, 2005), the passion-for-work model postulates that employees become highly involved with their work following two separate processes. First, an autonomous or self-determined internalization of work into identity may occur when employees are involved in their work because it is fun or developmental (Vallerand & Houlfort, 2003). Referred to as harmonious passion for work (HP), this defines a willed, controllable job involvement where work is seen as important and yet not all-consuming (e.g. Ho & Pollack, 2014). HP has been associated with a range of beneficial outcomes, including in-role performance, well-being, flow, organizational commitment, pro-environmental behavior, and positive affect. It has also been found to relate negatively to role conflict and role overload as well as burnout (cf. Curran et al., 2015; Marsh et al., 2013).

In contrast, a controlled internalization of work into identity may occur when employees are involved in their work due to secondary gains, e.g., the admiration of co-workers or performance-based self-esteem (e.g. Mageau, Carpentier, & Vallerand, 2011). Referred to as obsessive passion for work (OP), this represents a disproportionate importance given to work and a strong drive to partake in work (e.g. Forest, Mageau, Sarrazin, & Morin, 2011). OP has

been associated with a range of negative outcomes, such as burnout, rumination, role conflict, and work/family conflict (cf. Curran et al., 2015; Marsh et al., 2013).

These previous studies are predominantly cross-sectional, cross-lagged, or prospective, including the research on passion for work and burnout (cf. Lavigne, Forest, Fernet, & Crevier-Braud, 2014). To date, and to the best of our knowledge, only one study has explored the change or rate of change of passion for work in predicting outcomes (Birkeland & Nerstad, 2016). Birkeland and Nerstad (2016) found that HP related to a decrease in incivility instigations over time, while OP related positively and stably to incivility instigations across one year. If passion for work represents a factor that is associated with changes in burnout levels, it is important to uncover it. We thus apply a longitudinal design to our study to gain more insight into the relationship between passion and burnout over time.

The conservation of resources (COR) theory suggests that individuals have cognitive and environmental resources that protect them from stressors that lead to burnout (Halbesleben, 2006; Hobfoll, 1989). These resources are either intrinsically valued or valued because they can help achieve or protect other valued resources (Hobfoll, 1989). Resources are assumed to be multiplicative, which means that they can be progressively accumulated (gain spirals), or depleted (loss spirals; e.g. Buchwald & Hobfoll, 2004; Hobfoll, 2001). Such spirals do not need "triggers" to generate change, but feed off previous experiences (Hobfoll, 2001). Gain spirals describe a positive process of personal resilience and growth that should be associated with less burnout over time (e.g. Schaufeli, Bakker, & Van Rhenen, 2009). We hypothesize that HP represent an intrinsic framework that lead to a gain spiral of decreased burnout over time. Because HP is linked to accessible psychological structures that are open, authentic, and less defensive (Donahue, Rip, & Vallerand, 2009; Hodgins & Knee, 2002), it is associated with a flexible, self-determined relationship with work (Fernet, Lavigne, Vallerand, & Austin, 2014). This relationship should make employees more capable of

acquiring the resources necessary to apply adaptive strategies in the face of challenges and hence become increasingly better at avoiding burnout symptoms over time. So when the going gets tough, the employees who have a high level of HP have more time (little rumination about work, less work overload, and less work–family conflict), a positive self-worth (independent of work performance), and the ability to engage in high-quality relationships, which, in turn, should reduce burnout symptoms over time (e.g. Jawahar, Stone, & Kisamore, 2007). We thus hypothesized the following:

Hypothesis 1: Harmonious passion is related to a decrease in (a) exhaustion and (b) cynicism over time.

In COR theory, loss spirals reflect the stress process, which is associated with a progressive impairment of or lack of access to, resources, as well as increases in burnout over time (e.g. Weigl et al., 2010). We hypothesize that OP represent an intrinsic framework that lead to a loss spiral of increased burnout over time. OP seems to be associated with deep psychological structures such as ego-invested self-concepts (Hodgins & Knee, 2002; Vallerand et al., 2003). The individual is thus often unaware of his or her deep-seated motives and so spends little time evaluating his or her feelings or their consequences. This leads to rigid perseverance because such individuals continue their behavior despite related negative emotions (Philippe, Vallerand, Houlfort, Lavigne, & Donahue, 2010). The constant involvement with and inability to detach from work, characteristics of OP, should be associated with exhaustion and cynicism over time. So when the going gets tough, the employees who have a high level of OP have less time (rumination about work, work overload, and work–family conflict), a self-worth that is dependent on work performance, as well as the physical strain of high workload (for an overview see Curran et al., 2015). In turn, the constant battle of trying to gain these resources could lead to increased burnout over time. This proposition also

aligns with the findings of previous studies of OP, exhaustion, and cynicism (e.g. Donahue et al., 2012; Vallerand et al., 2010). Accordingly, we hypothesized:

Hypothesis 2: Obsessive passion is related to an increase in (a) exhaustion and (b) cynicism over time.

The Moderating Roles of Perceived Co-worker Support and Perceived Supervisor Support

According to COR theory, social support can both increase the individual's pool of available resources and replace or reinforce other resources that have been lacking (Halbesleben, 2006; Hobfoll, 1988). A meta-analysis by Ng and Sorensen (2008) showed that the strength of the association between the different types of support might differ even with the same antecedents and consequences. We therefore treat perceived supervisor support (PSS) and perceived co-worker support (PCS) as separate constructs.

Employees with higher levels of HP may appreciate support from both supervisors and co-workers, but because of their autonomous and balanced approach to work (Liu, Chen, & Yao, 2011); their well-being should not be contingent on perceptions of social support. They have enough resources of their own, such as self-efficacy and a strong sense of self-worth (Forest et al., 2012; Stenseng & Dalskau, 2010), and should thus be able to change their situation if they feel that their well-being is threatened.

For individuals with higher levels of OP, PSS and PCS may provide resources that help dampen the relationship with burnout. Firstly, PSS should moderate the relationship between OP for work and burnout. One study in particular revealed that PSS alleviated the impact of work demands on professional efficacy and burnout (Gibson, Grey, & Hastings, 2009). The relationship between OP and burnout might be weaker when employees perceive that their supervisors care about their well-being and facilitate work accordingly. For example, the supervisor may increase the individual's pool of available resources such as time

(e.g. the supervisor alleviates the workload; Coyle-Shapiro & Shore, 2007). This should allow workers to reduce rigid work patterns and stop working when work feels exhausting or unpleasant, thus reducing the risk of burnout. Furthermore, this process might also invigorate accumulation of resources over time, making the employees increasingly resilient from the toll of their work relationship. Over time, having supervisors increasing employees' resources through their support might subsequently decrease employees' burnout symptoms. We thus hypothesized the following:

Hypothesis 3: The relationships between obsessive passion and (a) exhaustion and (b) cynicism are moderated by perceived supervisor support; the higher the perceived supervisor support, the stronger the attenuation in the relationship between obsessive passion and burnout symptoms over time.

As far as the moderating role of PCS goes, research findings are limited. One study found that of three sources of social support (supervisor, coworkers, and friends), a teacher's co-workers were the most important buffers of emotional exhaustion (Greenglass, Fiksenbaum, & Burke, 1996). Other studies have found that PCS acts as a buffer between stress and its relationship with deviant behavior and well-being (Sloan, 2012). Another study suggested that high-quality relationships with co-workers buffered the association between low self-determined work motivation and burnout (Fernet, Gagné, & Austin, 2010). As individuals with higher levels of OP are mainly motivated by extrinsic gains, they also exhibit low self-determined motivation and performance-based self-esteem (Lafrenière, Vallerand, & Sedikides, 2013; Vallerand et al., 2006). In such a situation, co-workers may increase the individual's pool of available resources such as self-worth (e.g. the co-worker makes the individual feel appreciated and valued, Sherif & Sherif, 1964). This might help the person higher in OP to relax and detach from work, which subsequently may prevent the employee from becoming exhausted and cynical about colleagues (Sonnentag, Binnewies, & Mojza, 2010). Similar to the

role of PSS, the response to the experience of PCS might also change over time. Over time, employees with higher levels of OP who also experience strong support from their colleagues might get the help they need to gain more resources and thus become increasingly resilient to the toll of their work relationship. We thus hypothesized the following:

> *Hypothesis 4: The relationships between obsessive passion and (a) exhaustion and (b) cynicism are moderated by perceived co-worker support; the higher the perceived co-worker support, the stronger the attenuation in the relationship between obsessive passion and burnout symptoms over time.*

Method

Participants and Procedure

The participants were 1,263 members of a Norwegian workers' union from the technical sector. They were employed in both the private sector (69%) and the public sector (31%). The group consisted of 37% women and 63% men. (Please see Table 1 for additional demographic information.) We collected data in three waves throughout 2011. The study was designed with equal time lags between the waves, as we had no prior expectations about rate of change (Singer & Willett, 2003). The Norwegian Centre for Research Data (NSD) evaluated and approved the study designs, samples, procedures, and questionnaires. A random sample of members from a large Norwegian workers' union was invited to participate (19,649 members). They received an e-mail with an electronic link to the survey, where it was also explained that by participating one also agreed to be invited to a second wave of the same survey. The e-mail further stressed that participation was voluntary and that personal information would be depersonalized following the study's completion. The response rate at Time 1 was 15%. Respondents who also responded to the second survey were invited to participate in the third survey; this resulted in complete three-wave data from 1,263 employees, with a response rate from Time 1 to Time 3 of 40%. Due to the low response rate, we testged for nonresponse bias by comparing early and

late respondents, as Armstrong and Overton (1977) suggested. In line with Buch, Kuvaas, and Dysvik (2010), an independent-samples *t* test was conducted to compare the scores of respondents who answered the first wave immediately with respondents who answered after one or two reminders. There were no significant differences in the scores from these two groups' responses. In order to test for nonresponse bias by attrition, we also conducted an independent-samples *t* test comparing the scores from respondents who only responded to Time 1 with scores from respondents who also responded to Time 2 and Time 3. There were no significant differences in the scores between the groups. Finally, to investigate whether our final sample was representative of the union members, we compared our sample's demographic variables to the member demographics. In our sample, 70% were from the private sector, as opposed to 54% of the overall members. Further, women represented 37% of our sample, whereas they represented 27% of the union.

Measures

All items were translated to Norwegian and then back-translated by a professional translator (Cascio, 2012). All items except burnout items were scored on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Burnout items were scored on a 7-point Likert scale ranging from 1 (*never*) to 7 (*every day*).

Passion for work was assessed with the Passion Scale (Vallerand et al., 2003), which included 12 items, half of which measured HP and the other half OP. HP was measured with items such as "My work is well integrated in my life," and OP was measured with items such as "My work is the only thing that really turns me on." Previous studies using Passion Scale has shown relatively strong discriminant and predictive validity, as well as reliability (Chronbach's alpha for study two was HP=.83, OP=.82; Birkeland & Buch, 2015).

PSS was assessed with four questions from the Perceived Organizational Support Questionnaire (Chronbach's alpha for study one was .90; Rhoades, Eisenberger, & Armeli,

2001), represented by items such as "My supervisor really cares about my well-being," while PCS was assessed with four questions from Ladd and Henry (2000; Chronbach's alpha was.94), represented by items such as "My co-workers strongly consider my goals and values." Both scales have fared well when tested for validity (see for example Ng & Sorensen, 2008).

Exhaustion and cynicism were assessed with the appropriate items from the Maslach Burnout Inventory – General Survey (MBI, Maslach, Jackson, & Leiter, 1996). Item examples include "I feel used up at the end of the work day" (exhaustion; Cronbach's alpha .90) and "I just want to do my job and not be bothered" (cynicism; Cronbach's alpha .79). The MBI has been subjected to substantial amounts of research and has proven quite rigorous (not counting the dimension personal accomplishment). For a validation of the Norwegian version, please see Richardsen and Martinussen (2004).

Since there are some gender differences in the experience of burnout symptoms, we controlled for gender in our analysis (Purvanova & Muros, 2010). Additionally, because certain studies show higher tendencies for burnout among younger employees, we controlled for age and tenure (Antoniou, Polychroni, & Vlachakis, 2006). Burnout is also related to high workload, so we controlled for how much time the participants spent at work (Ilies, Dimotakis, & De Pater, 2010).

Analyses

An initial maximum likelihood exploratory factor analysis (EFA) with Promax rotation was conducted to determine item retention (Farrell, 2010). All the study variables (except control variables) were included in this EFA. This approach was applied because the constructs are assumed to be theoretically distinct from each other as well as based on a random selection of the population (Ford, MacCallum, & Tait, 1986; Harman, 1976).

Insert Figure 1 about here

In order to test the hypotheses, we applied multilevel analysis using SPSS 20 (Hox, 2010; Singer & Willett, 2003). A simplified version of the tested model can be found in Fig. 1. Multilevel analysis was chosen to account for the non-independence of the data and because it provided information on both within- and between-individual variation over time. This procedure was performed with a stacked format of the data, where time was coded so that 0, 1, and 2 represented Times 1, 2 and 3, respectively. As the dependent variables were not normally distributed, we applied a logistical transformation and performed the following analyses on the transformed dependent variables (Hox, 2010). Multilevel analysis allows for the estimation of direct relationships between OP for work and burnout symptoms as well as a trajectory of individual and between-individual change. This means that we simultaneously tested two subsidiary models for exhaustion and cynicism, respectively: a Level 1 submodel that describes how each person changes over time and a Level 2 submodel that describes how these changes differ across people (Singer & Willett, 2003). Within each of these two levels, the intercept and slope describe the mean growth. Further, between-individual differences (or level 2 differences) in the parameters that described the growth curve were modeled as random effects for the intercept and slope of the time variable. We estimated both within- and between-individual change in burnout symptoms. To assess improvement of model fit and thus explained variance, when adding hypothesized variables, we performed a deviance difference test using Aikaike's Information Criteria (AIC; Hox, 2010). As with all absolute-fit indices, AIC is susceptible to sample size, and it is advisable to include more information to assess model fit (la Du & Tanaka, 1989). We thus included Pseudo R^2 statistics to evaluate the effectiveness of the added variables to explain the between-individual variance (Kwok et al., 2008; Singer & Willett, 2003).

Specifically, the Pseudo R^2 considers the proportion of level 2 (between-level) variance accounted for beyond the null model by all the independent variables included in the model.

The intraclass correlation coefficient (ICC) was moderately to relatively high (cynicism r = .66, exhaustion r = .75), suggesting that the biggest amount of variance is between respondents and not within (Twisk, 2010). We therefore concentrated on the between-individual changes in burnout symptoms and the role of passion in relation to this change.

In these models, the Level 1 intercept coefficient represent baseline values of exhaustion and cynicism, respectively, and the Level 1 slope represents an estimate of linear change over time (i.e., decrease in either exhaustion or cynicism). All other study variables, including control variables, represent Level 2 variables in the models.

Results

The EFA showed that all items except Item 9 of the Passion Scale loaded on their designated factor with no cross-loadings. Item 9 loaded on a separate factor but had no cross-loadings with other factors. We then inspected the scale by comparing its reliability with and without Item 9. There was no change in overall reliability, and we therefore included the item in subsequent analyses in order to capture the full range of the operationalized construct.

Table 1 shows the means, standard deviation, reliabilities, and correlations of all study variables. The reliability was consistent and relatively high with all study variables at all three time points (ranging from .80 to .93).

Insert Table 1 about here

Insert Table 2 about here

Test of the Hypothesized Direct Relationships (H1 and H2)

To account for hypothesized change in the relationships of HP and OP to burnout, we examined four hierarchically nested models as suggested by Hox (2010). Tables 2 and 3 depict the results of the analyses with exhaustion and cynicism, respectively. The intraclass correlation coefficient (ICC) was moderately to relatively high (exhaustion ICC = .74 and cynicism ICC = .66), suggesting that 74% and 66% of the variance, respectively, reflected consistent response patterns for respondents over time (Twisk, 2010).

Level 1 represents within-individual estimation, and Level 2 represents between-individual estimation. Model 1 is the null model, with only the base level of the dependent variable estimated in Level 2. In Model 2, we added the intercept and slope (time) in Level 1. The slope represents the potential increase or decrease in the dependent variable. When we added time in Model 2, the significant fixed effects of the slope indicated between-individual increases in burnout symptoms (both cynicism and exhaustion). The significant random effects of the slopes indicated minor within-individual increases in burnout symptoms.

In Model 3, we added control variables, and Model 4 included the direct relationships of HP and OP with cynicism and exhaustion. This improved the model fit above the control variables, as the deviance (AIC) was significantly reduced.

Hypothesis 1 was supported, as HP was related to a minimal decrease in both exhaustion and cynicism over time. OP was positively related to exhaustion and cynicism but unrelated to changes in exhaustion and cynicism over time. Hypothesis 2 was therefore not supported.

Test of the Hypothesized Moderating Relationships (H3 and H4)

To test Hypotheses 3 and 4, we again examined four hierarchically nested models. We added the variable set of perceived support and the interaction terms to Model 5 and compared it to Models 1 through 4. Interaction terms often create multicollinearity problems because of

their correlations with main effects. We thus computed the interaction terms by centering the variables before multiplying them with each other (Aiken & West, 1991). Adding the support variable set improved the model fit above the direct effects, and the deviance was significantly reduced.

Contrary to our expectations, PSS did not moderate the relationship with either exhaustion or cynicism. Therefore, Hypothesis 3 was not supported. With respect to PCS, it moderated the relationship between OP and cynicism but not the relationship between OP and exhaustion. This means that Hypothesis 4b was supported.

The interaction between OP and PCS on cynicism is depicted in Figure 2, which plots the conditional effect or "simple slope" of OP at various values of PCS by using the estimated coefficients from the model. The statistical model that tested Hypothesis 4b; the degree to which PCS attenuates the relationship between OP and burnout over time, is a three-way interaction model in which one of the variables are at the within-individual level (time) and the two other variables are at the between-individual level (OP and PCS). To our best knowledge, there is no known way of statistically probing the significance of the slope of such three-way interaction when the variables are at different levels (Dawson, 2012). Therefore, we tested and plotted the significant interaction using the two-way interaction (not including time). As can be seen, among employees with low levels of PCS, the relationship is nonsignificant, with all levels of OP associated with higher levels of cynicism. The relationship decreases as PCS increases; however, the buffering role of PCS is the most apparent (and significant) for employees with lower levels of OP than for employees with higher levels of OP. We formally probed this interaction by using the Johnson-Neyman technique (Bauer & Curran, 2005; Hayes & Matthes, 2009), which mathematically derives the "regions of significance" for the conditional effect of PCS, meaning the values within the range of the moderator in which the association between OP and cynicism is statistically different from zero. The "pick-a-point" approach suggested by

Aiken and West (1991) is less precise in skewed datasets as it distributes differently around the mean. With these data, the skew of the distribution of PCS makes it difficult to justify the selection of values of PCS to define "low," "moderate," and "high." For instance, a "low" value of one standard deviation above the mean (or 4,456 here), which is typically used when probing interactions, is actually above the range of possible measurement as well as the observed data in this case. The mean of PCS (5.47) is only slightly below the maximum value observed (7).

When illustrating the numbers from the three-way interaction model in Figure 3, it seems, however, that the strength of the association between OP and cynicism is lower when PCS is high. Yet, it still seems far better to score low on OP than to rely on having caring co-workers.

Insert Figure 2 about here

Insert Figure 3 about here

Discussion

The purpose of this study was to examine the stability of the relationship between passion and burnout over time, and whether support perceptions in the form of perceived supervisor support and perceived co-worker support moderates this relationship.

With respect to the stability of the relationships over time, our findings show that, in line with our hypothesis, increasing levels of HP are associated with decreasing levels of emotional exhaustion in employees and cynicism toward their work or co-workers over time. This is because employees with high HP are conscious about the choices they make, and become increasingly better at it as they gain more resources. In contrast, and not in line with our hypothesis, increasing levels of OP do relate to feeling exhausted and callous toward work and co-workers, but these feelings do not increase over time.

This stability might reflect the fact that OP stems from relatively subconscious psychological structures in the individual, such as ego-invested self-concepts (Hodgins & Knee, 2002; Vallerand et al., 2003). An ego-invested self-concept reduces the individual to passive bystanders of their own emotional reactions. Similar responses have been indicated in previous studies as OP seems to undermine the individuals' ability to self-regulate (Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013b; Lafrenière et al., 2011). Their relationship with work thus characterize a passive understanding of how they feel about the work itself and their colleagues. They may experience burnout symptoms regardless of the situation around them, and so little may change.

Second, and perhaps most interestingly, by applying the Johnson-Neyman technique, we show that the level of OP can be decisive in understanding how or when a supporting environment is actually helpful in protecting against burnout. In using the COR theory (e.g. Hobfoll, 1989), we contribute empirically to the literature on passion for work by suggesting a situational contingency that may reduce a negative outcome of OP (e.g. Forest et al., 2011), but we find that this attenuation may depend on the level of the OP. Specifically, our findings show that perceived co-worker support is only effective for employees with low to moderate levels of OP. If the level of OP is too high, the perceived co-worker support is not sufficient to protect employees from cynicism toward their work, clients, or colleagues. This is in line with the results from another longitudinal study on OP and incivility. Birkeland and Nerstad (2016) found that low levels of OP in combination with high levels of a mastery climate are associated with lower levels of incivility instigations, whereas high levels of OP in combination with high levels of a perceived mastery climate actually increase incivility instigations.

Limitations and Research Directions

The contributions of this research should be viewed in light of its limitations. First, the data were collected from one large workers' union, making it difficult to control for differences in type of job and workplace. It might be that differences in organizations' HR systems and their applications lead to different perceptions of support among employees. On the other hand, having union data might also be considered a strength, as the employees thus represent a variety of jobs in both the private and the public sectors. Nonetheless, the role of HR systems and other potential moderators should be investigated.

A second weakness is that a longitudinal design does not allow for strong conclusions regarding causality. In passive observational designs, correlations between factors may be caused by variables that were not assessed (Finkel, 1995). Nevertheless, as Orth, Robins, and Meier suggested (2009, p. 318), ''longitudinal analyses are useful because they can indicate whether the data are consistent with a causal model of the relation between the variables.'' Experimental designs that manipulate the perceived support, for example, could be an interesting way to investigate causality more closely. Bélanger and colleagues (e.g. 2013) have made important progress in conducting experiments on passion for an activity, and perhaps this could also be applied to a work setting.

The exclusive reliance on self-reported questionnaire data is a third limitation that might cause concerns about possible mono-method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). However, since our data were collected in three waves and over a period of 10 months, the possibility of percept-percept inflated measures is lowered and in line with expert advice (Podsakoff et al., 2012)

We also experienced a low overall response rate, which could possibly undermine the generalizability of the data and produce misleading conclusions (Rogelberg & Stanton, 2007). Nevertheless, various tests for nonresponse bias revealed a low possibility for this bias in our

data. Another potential response bias inherent in our data is the forced-choice option chosen when gathering the data (Winters, Bartlett, & Leve, 1965). As pointed out by one anonymous reviewer: "by forcing a response (in order to continue to subsequent questions), you may find that respondents will dissimulate/falsely respond to an item that, otherwise, they would have left blank (missing data)." Initial probing for outliers did not indicate major inconsistencies in the response patterns, but in the future, we will ensure that the respondents have the opportunity to skip questions that they do not see fit to answer.

Lastly, our final model suffered from lack of statistical power. The power of a moderated regression analysis is often low because the effect size of the interaction term is reduced by the main effects (Aiken & West, 1991). The statistical power can be further decreased with little variation in the outcome variable (Aguinis, 1995). Both the variability and frequency in the emotional exhaustion experienced by the employees were relatively low (M = 2.87, SD = 1.20). As a result, the statistical power to detect a significant interaction was substantially lowered, and this may be reflected in the lack of significance in two of our hypotheses. However, if the results are theoretically or practically meaningful, it is still important to account for them (e.g. Aguinis, Beaty, Boik, & Pierce, 2005). Evans (1985) suggested that interaction effects are so difficult to detect that we should consider them to account for as little as 1% of the total variance. We therefore consider the achieved increase of 16% in explained variance in the final model important enough to discuss the practical implications of our results. Furthermore, we argue that given the potentially detrimental outcomes of burnout; if a slight increase in coworker support can buffer burnout symptoms for some employees, these results are meaningful.

Implications for Practice

Because strong burnout seems to entail irreversible patterns of reduced cognitive performance with respect to effort and motivation, organizations need to look for ways to alleviate it (e.g. van Dam, Keijsers, Eling, & Becker, 2011).

Perhaps the most vital contribution of our study is its demonstration of how PCS affects the relationship between passion for work and burnout. On the positive side, it seems that high co-worker support might represent a condition in which employees with lower levels of OP experience less cynicism. However, this seems to work only up to a certain level of OP, after which not even co-worker support seems to have an effect. In such cases, organizations may find themselves in a situation where they need to learn more about how to provide necessary help to treat that obsessive behavior (Pallesen, Mitsem, Kvale, Johnsen, & Molde, 2005). A practical implication of this result is inevitably related to organizational selection and recruitment guidelines. Although unethical, one of the implications of the results of this paper could be that organizations should look for ways to circumvent individuals with strong OP from entering the organizations in the first place, as they may represent future costs in terms of burnout.

Regardless of this somewhat depressing turn of the paper, organizations might still benefit from paying attention to the importance of employees' perceptions of their co-workers, as many employees will still benefit from PCS. Research has shown that newcomers' PSS tends to decline after organizational entry (Jokisaari & Nurmi, 2009), and this might also be the case for PCS. It might thus be particularly important for organizations and co-workers alike to find ways to extend and maintain these perceptions of co-worker support.

With respect to increasing PCS, Zagenczyk, Scott, Gibney, Murrell, and Thatcher (2010) found that employees look to their co-workers for advice on how to maneuver in

complex organizations. According to the researchers, having strong advice relations should produce results that are similar to perceived organizational support. Organizations might benefit from looking for opportunities to enhance such advice relations, perhaps through mentoring and increasing possibilities of cooperation and interaction. Finally, organizational support theory suggests that the organization itself has the potential to create structures and climates that support and reward coworkers and expect them to provide support to each other (Eisenberger & Stinglhamber, 2011). Specifically, organizations or supervisors might look for ways to enhance the performance of organizational citizenship behaviors, particularly those directed toward other individuals, like displaying helping behaviors (Van Dyne & LePine, 1998).

References

Aguinis, Herman. (1995). Statistical power problems with moderated multiple regression in management research. *Journal of Management, 21*(6), 1141-1158.

Aguinis, Herman, Beaty, James C., Boik, Robert J., & Pierce, Charles A. (2005). Effect Size and Power in Assessing Moderating Effects of Categorical Variables Using Multiple Regression: A 30-Year Review. *Journal of Applied Psychology, 90*(1), 94-107.

Aiken, Leona S., & West, Stephen G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA US: Sage Publications, Inc.

Alarcon, Gene M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior, 79*(2), 549-562.

Antoniou, Alexander - Stamatios, Polychroni, Fotini H., & Vlachakis, A. N. (2006). Gender and age differences in occupational stress and professional burnout between primary and high-school teachers in Greece. *Journal of Managerial Psychology, 21*(7), 682-690.

Armstrong, J. Scott, & Overton, Terry S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research, 14*(3), 396-402.

Bakker, Demerouti, Evangelia, & Verbeke, Willem. (2004). Using the Job Demands-Resources Model To Predict Burnout and Performance. *Human Resource Management, 43*(1), 83-104.

Bauer, D. J., & Curran, P. J. (2005). Probing interactions in fixed and multilevel regression: Inferential and graphical techniques. *Multivariate Behavioral Research, 40*(3), 373-400. doi: 10.1207/s15327906mbr4003_5

Bélanger, Jocelyn J., Lafrenière, Marc-André K., Vallerand, Robert J., & Kruglanski, Arie W. (2013). When passion makes the heart grow colder: The role of passion in alternative goal suppression. *Journal of Personality and Social Psychology, 104*(1), 126-147.

Birkeland, I. K., & Nerstad, C. (2016). Incivility Is (Not) the Very Essence of Love: Passion for Work and Incivility Instigation. *Journal of Occupational Health Psychology, 21*(1), 77-90. doi: 10.1037/a0039389

Birkeland, Ide Katrine, & Buch, Robert. (2015). The dualistic model of passion for work: Discriminate and predictive validity with work engagement and workaholism. *Motivation and Emotion, 39*(3), 392-408. doi: 10.1007/s11031-014-9462-x

Boersma, Katja, & Lindblom, Karin. (2009). Stability and change in burnout profiles over time: A prospective study in the working population. *Work & Stress, 23*(3), 264-283.

Brauchli, Rebecca, Schaufeli, Wilmar B., Jenny, Gregor J., Füllemann, Désirée, & Bauer, Georg F. (2013). Disentangling stability and change in job resources, job demands, and employee well-being — A three-wave study on the Job-Demands Resources model. *Journal of Vocational Behavior, 83*(2), 117-129.

Buch, Robert, Kuvaas, Bård, & Dysvik, Anders. (2010). Dual support in contract workers' triangular employment relationships. *Journal of Vocational Behavior, 77*(1), 93-103.

Buchwald, P., & Hobfoll, S. E. (2004). Burnout in the conservation of resources theory. *Psychologie in Erziehung Und Unterricht, 51*(4), 247-257.

Cascio, Wayne. (2012). Methodological issues in international HR management research. *The International Journal of Human Resource Management, 23*(12), 2532-2545.

Casper, Wendy J., Eby, Lillian T., Bordeaux, Christopher, Lockwood, Angie, & Lambert, Dawn. (2007). A review of research methods in IO/OB work-family research. *Journal of Applied Psychology, 92*(1), 28-43.

Cherniss, Cary. (1980). *Professional burnout in human service organizations*. New York: Praeger.

Chiaburu, Dan S., & Harrison, David A. (2008). Do peers make the place? Conceptual synthesis and meta-analysis of coworker effects on perceptions, attitudes, OCBs, and performance. *Journal of Applied Psychology, 93*(5), 1082-1103.

Coyle-Shapiro, Jacqueline A. M., & Shore, Lynn M. (2007). The employee-organization relationship: Where do we go from here? *Human Resource Management Review, 17*(2), 166-179.

Curran, T., Hill, A. P., Appleton, P. R., Vallerand, R. J., & Standage, M. (2015). The psychology of passion: A meta-analytical review of a decade of research on intrapersonal outcomes. *Motivation and Emotion, 39*(5), 631-655. doi: 10.1007/s11031-015-9503-0

Dawson, Jeremy F. (2012). [Probing three-way interactions when time is W2].

Donahue, Eric G., Forest, Jacques, Vallerand, Robert J., Lemyre, Pierre-Nicolas, Crevier-Braud, Laurence, & Bergeron, Éliane. (2012). Passion for work and emotional exhaustion: The mediating role of rumination and recovery. *Applied Psychology: Health and Well-Being, 4*(3), 341-368.

Donahue, Eric G., Rip, Blanka, & Vallerand, Robert J. (2009). When winning is everything: On passion, identity, and aggression in sport. *Psychology of Sport and Exercise, 10*(5), 526-534.

Eisenberger, Robert, Huntington, Robin, Hutchison, Steven, & Sowa, Debora. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500-507.

Eisenberger, Robert, & Stinglhamber, Florence. (2011). *Perceived organizational support : fostering enthusiastic and productive employees*. Washington, D.C.: American Psychological Association.

Evans, Martin G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes, 36*(3), 305-323.

Farrell, Andrew M. (2010). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of Business Research, 63*(3), 324-327.

Fernet, Claude, Gagné, Marylène, & Austin, Stéphanie. (2010). When does quality of relationships with coworkers predict burnout over time? The moderating role of work motivation. *Journal of Organizational Behavior, 31*(8), 1163-1180.

Fernet, Claude, Lavigne, Geneviève L., Vallerand, Robert J., & Austin, Stéphanie. (2014). Fired up with passion: Investigating how job autonomy and passion predict burnout at career start in teachers. *Work & Stress, 28*(3), 270-288.

Finkel, Steven E. (1995). *Causal analysis with panel data* (Vol. 105). Thousand Oaks, Calif.: Sage.

Ford, J.Kevin, MacCallum, Robert C., & Tait, Marianne. (1986). The application of exploratory factor analysis in applied psychology: A critical review and analysis. *Personnel Psychology, 39*, 291-314.

Forest, Jacques, Mageau, Geneviève A., Crevier-Braud, Laurence, Bergeron, Éliane, Dubreuil, Philippe, & Lavigne, Geneviève L. (2012). Harmonious passion as an explanation of the relation between signature strengths' use and well-being at work: Test of an intervention program. *Human Relations, 65*(9), 1233-1252.

Forest, Jacques, Mageau, Geneviève A., Sarrazin, Claude, & Morin, Estelle M. (2011). 'Work is my passion': The different affective, behavioural, and cognitive consequences of harmonious and obsessive passion toward work. *Canadian Journal of Administrative Sciences (John Wiley & Sons, Inc.), 28*(1), 17-30.

Gagne, Marylene, & Deci, Edward L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*(4), 331-362.

Gibson, Jennifer A., Grey, Ian M., & Hastings, Richard P. (2009). Supervisor support as a predictor of burnout and therapeutic self-efficacy in therapists working in ABA schools. *Journal of Autism and Developmental Disorders, 39*(7), 1024-1030.

Greenglass, E., Fiksenbaum, L., & Burke, R. J. (1996). Components of social support, buffering effects and burnout: Implications for psychological functioning. *Anxiety Stress and Coping, 9*(3), 185-197. doi: 10.1080/10615809608249401

Halbesleben, Jonathon R. B. (2006). Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *Journal of Applied Psychology, 91*(5), 1134-1145.

Halbesleben, Jonathon R. B., & Buckley, M. Ronald. (2004). Burnout in organizational life. *Journal of Management, 30*(6), 859-879.

Harman, Harry H. . (1976). *Modern factor analysis* (Vol. 3). Chicago: University of Chicago Press.

Hayes, Andrew F., & Matthes, Jörg. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods, 41*(3), 924-936.

Ho, Violet T., & Pollack, Jeffrey M. (2014). Passion Isn't Always a Good Thing: Examining Entrepreneurs' Network Centrality and Financial Performance with a Dualistic Model of Passion. *Journal of Management Studies, 51*(3), 433-459. doi: 10.1111/joms.12062

Ho, Violet T., Wong, Sze-Sze, & Lee, Chay Hoon. (2011). A Tale of Passion: Linking Job Passion and Cognitive Engagement to Employee Work Performance. *Journal of Management Studies, 48*(1), 26-47.

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory. *Applied Psychology-an International Review-Psychologie Appliquee-Revue Internationale, 50*(3), 337-370. doi: 10.1111/1464-0597.00062

Hobfoll, Stevan E. (1988). *The ecology of stress*. Washington, DC US: Hemisphere Publishing Corp.

Hobfoll, Stevan E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.

Hodgins, Holley S., & Knee, C. Raymond. (2002). The integrating self and conscious experience. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research.* (pp. 87-100). Rochester, NY US: University of Rochester Press.

Houlfort, Nathalie, Philippe, Frédérick L., Vallerand, Robert J., & Ménard, Julie. (2014). On passion and heavy work investment: personal and organizational outcomes. *Journal of Managerial Psychology, 29*(1), 25-45. doi: 10.1108/JMP-06-2013-0155

Hox, Joop J. (2010). *Multilevel analysis : techniques and applications*. New York: Routledge.

Ilies, Remus, Dimotakis, Nikolaos, & De Pater, Irene E. (2010). Psychological and Physiological Reactions to High Workloads: Implications for Well-Being. *Personnel Psychology, 63*(2), 407-436.

Jawahar, I. M., Stone, Thomas H., & Kisamore, Jennifer L. (2007). Role conflict and burnout: The direct and moderating effects of political skill and perceived organizational support on burnout dimensions. *International Journal of Stress Management, 14*(2), 142-159.

Jokisaari, Markku, & Nurmi, Jari-Erik. (2009). Change in Newcomers' Supervisor Support and Socialization Outcomes after Organizational Entry. *Academy of Management Journal, 52*(3), 527-544.

Kwok, Oi-Man, Underhill, Andrea T., Berry, Jack W., Luo, Wen, Elliott, Timothy R., & Yoon, Myeongsun. (2008). Analyzing longitudinal data with multilevel models: An

example with individuals living with lower extremity intra-articular fractures. *Rehabilitation Psychology, 53*(3), 370-386.

la Du, Terence J., & Tanaka, J. S. (1989). Influence of sample size, estimation method, and model specification on goodness-of-fit assessments in structural equation models. *Journal of Applied Psychology, 74*(4), 625-635.

Ladd, D., & Henry, R. A. (2000). Helping coworkers and helping the organization: The role of support perceptions, exchange ideology, and conscientiousness. *Journal of Applied Social Psychology, 30*(10), 2028-2049. doi: 10.1111/j.1559-1816.2000.tb02422.x

Lafrenière, Marc-André K., Vallerand, Robert J., & Sedikides, Constantine. (2013). On the relation between self-enhancement and life satisfaction: The moderating role of passion. *Self and Identity, 12*(6), 597-609.

Lavigne, G. L., Forest, J., Fernet, C., & Crevier-Braud, L. (2014). Passion at work and workers' evaluations of job demands and resources: a longitudinal study. *Journal of Applied Social Psychology, 44*(4), 255-265. doi: 10.1111/jasp.12209

Leiter, Michael P., Hakanen, Jari J., Ahola, Kirsi, Toppinen-Tanner, Salla, Koskinen, Aki, & Väänänen, Ari. (2013). Organizational predictors and health consequences of changes in burnout: A 12-year cohort study. *Journal of Organizational Behavior, 34*(7), 959-973. doi: 10.1002/job.1830

Liu, Dong, Chen, Xiao-Ping, & Yao, Xin. (2011). From autonomy to creativity: A multilevel investigation of the mediating role of harmonious passion. *Journal of Applied Psychology, 96*(2), 294-309.

Mageau, Geneviève A., Carpentier, Joëlle, & Vallerand, Robert J. (2011). The role of self-esteem contingencies in the distinction between obsessive and harmonious passion. *European Journal of Social Psychology, 41*(6), 720-729.

Makikangas, A., Kinnunen, U., Feldt, T., & Schaufeli, W. (2016). The longitudinal development of employee well-being: a systematic review. *Work and Stress, 30*(1), 46-70. doi: 10.1080/02678373.2015.1126870

Marsh, Herbert W., Vallerand, Robert J., Lafrenière, Marc-André K., Parker, Philip, Morin, Alexandre J. S., Carbonneau, Noémie, . . . Paquet, Yvan. (2013). Passion: Does one scale fit all? Construct validity of two-factor passion scale and psychometric invariance over different activities and languages. *Psychological Assessment, 25*(3), 796-809. doi: 10.1037/a0032573.supp (Supplemental)

Maslach, Christina. (1982). *Burnout : the cost of caring*. New York: Prentice Hall.

Maslach, Christina, Jackson, Susan E., & Leiter, Michael P. (1996). *Maslach burnout inventory manual*. Palo Alto, Calif.: Consulting Psychologists Press.

Maslach, Christina, & Leiter, Michael P. (1997). *The truth about burnout: how organizations cause personal stress and what to do about it*. San Francisco, Calif.: Jossey-Bass Publishers.

Maslach, Christina, Schaufeli, Wilmar B., & Leiter, Michael P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397-422.

Ng, Thomas W. H., & Sorensen, K. L. (2008). Toward a further understanding of the relationships between perceptions of support and work attitudes - A meta-analysis. *Group & Organization Management, 33*(3), 243-268.

Orth, Ulrich, Robins, Richard W., & Meier, Laurenz L. (2009). Disentangling the effects of low self-esteem and stressful events on depression: Findings from three longitudinal studies. *Journal of Personality and Social Psychology, 97*(2), 307-321.

Pallesen, Ståle, Mitsem, Morten, Kvale, Gerd, Johnsen, Bjørn-Helge, & Molde, Helge. (2005). Outcome of psychological treatments of pathological gambling: A review and meta-analysis. *Addiction, 100*(10), 1412-1422.

Perrewé, Pamela L., Hochwarter, Wayne A., Ferris, Gerald R., McAllister, Charn P., & Harris, John N. (2014). Developing a passion for work passion: Future directions on an emerging construct. *Journal of Organizational Behavior, 35*(1), 145-150.

Philippe, Frederick L., Vallerand, Robert J., Houlfort, Nathalie, Lavigne, Geneviève L., & Donahue, Eric G. (2010). Passion for an activity and quality of interpersonal relationships: The mediating role of emotions. *Journal of Personality and Social Psychology, 98*(6), 917-932.

Podsakoff, Philip M., MacKenzie, Scott B., & Podsakoff, Nathan P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539-569. doi: 10.1146/annurev-psych-120710-100452

Purvanova, Radostina K., & Muros, John P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior, 77*(2), 168-185.

Rhoades, Linda, Eisenberger, Robert, & Armeli, Stephen. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology, 86*(5), 825-836.

Richardsen, Astrid M., & Martinussen, Monica. (2004). The Maslach Burnout Inventory: Factorial validity and consistency across occupational groups in Norway. *Journal of Occupational and Organizational Psychology, 77*(3), 377-384.

Rogelberg, Steven G., & Stanton, Jeffrey M. (2007). Introduction: Understanding and dealing with organizational survey nonresponse. *Organizational Research Methods, 10*(2), 195-209.

Schaufeli, Wilmar B., Bakker, Arnold B., & Van Rhenen, Willem. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior, 30*, 893-917.

Sherif, Muzafer, & Sherif, Carolyn W. (1964). *Reference groups : exploration into conformity and deviation of adolescents*. New York: Harper and Row.

Singer, Judith D., & Willett, John B. (2003). *Applied longitudinal data analysis: modeling change and event occurrence*. Oxford: Oxford University Press.

Sloan, Melissa M. (2012). Unfair treatment in the workplace and worker well-being: The role of coworker support in a service work environment. *Work and Occupations, 39*(1), 3-34.

Sonnentag, Sabine, Binnewies, Carmen, & Mojza, Eva J. (2010). Staying well and engaged when demands are high: The role of psychological detachment. *Journal of Applied Psychology, 95*(5), 965-976.

Stenseng, Frode, & Dalskau, Lina Harvold. (2010). Passion, self-esteem, and the role of comparative performance evaluation. *Journal of Sport & Exercise Psychology, 32*(6), 881-894.

Swider, Brian W., & Zimmerman, Ryan D. (2010). Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *Journal of Vocational Behavior, 76*(3), 487-506.

Twisk, Jos W. R. (2010). *Applied multilevel analysis : a practical guide*. Cambridge: Cambridge University Press.

Vallerand, Robert J., & Houlfort, Nathalie. (2003). Passion at Work: Toward a New Conceptualization. In S. W. S. Gilliland, Dirk D. E.; Skarlicki, Daniel P. (Ed.), *Emerging perspectives on values in organizations* (pp. 175 - 204). Greenwich, CT: Information Age Publishing.

Vallerand, Robert J., Mageau, Genevive A., Ratelle, Catherine, Léonard, Maude, Blanchard, Celine, Koestner, Richard, . . . Marsolais, Jose. (2003). Les Passions de l'Ãme: On

Obsessive and Harmonious Passion. *Journal of Personality & Social Psychology, 85*, 756-767.

Vallerand, Robert J., Paquet, Yvan, Philippe, Frederick L., & Charest, Julie. (2010). On the role of passion for work in burnout: A process model. *Journal of Personality, 78*(1), 289-312.

Vallerand, Robert J., Rousseau, François L., Grouzet, Frédérick M. E., Dumais, Alexandre, Grenier, Simon, & Blanchard, Céline M. (2006). Passion in Sport: A Look at Determinants and Affective Experiences. *Journal of Sport & Exercise Psychology, 28*(4), 454-478.

van Dam, Arno, Keijsers, Ger P. J., Eling, Paul A. T. M., & Becker, Eni S. (2011). Testing whether reduced cognitive performance in burnout can be reversed by a motivational intervention. *Work & Stress, 25*(3), 257-271.

Van Dyne, Linn, & LePine, Jeffrey A. (1998). Helping and voice extra-role behaviors: evidence of construct and predictive validity. *Academy of Management Journal, 41*(1), 108-119.

Weigl, M., Hornung, S., Parker, S. K., Petru, R., Glaser, J., & Angerer, P. (2010). Work engagement accumulation of task, social, personal resources: A three-wave structural equation model. *Journal of Vocational Behavior, 77*(1), 140-153. doi: 10.1016/j.jvb.2010.03.002

Winters, S., Bartlett, C. J., & Leve, R. (1965). Instructional and response-style factors with forced-choice response. *American Psychologist, 20*(7), 498-498.

Xanthopoulou, Despoina, Bakker, Arnold B., Dollard, Maureen F., Demerouti, Evangelia, Schaufeli, Wilmar B., Taris, Toon W., & Schreurs, Paul J. G. (2007). When do job demands particularly predict burnout?: The moderating role of job resources. *Journal of Managerial Psychology, 22*(8), 766-786.

Zagenczyk, Thomas J., Scott, Kristin D., Gibney, Ray, Murrell, Audrey J., & Thatcher, Jason Bennett. (2010). Social influence and perceived organizational support: A social networks analysis. *Organizational Behavior and Human Decision Processes, 111*(2), 127-138.

Table 1

Mean, Standard Deviation, Correlation, and Reliability of All Study Variables

		M	SD	1	2	3	4	5	6	7	8	9	10
1	Gender	1.63	.48										
2	Age	42.23	10.15	.18**									
3	Tenure	7.30	7.19	.12**	.54**								
4	Hours/week	40.05	6.63	.16**	−.01	−.07*							
5	HP_T1	4.78	.94	−.04	−.01	−.06*	.02	(.82)					
6	HP_T2	4.80	.93	−.01	.00	−.04	.04	.70**					
7	HP_T3	4.80	.96	−.03	−.03	−.08**	.06*	.66**	.71**				
8	OP_T1	2.39	1.06	.15**	.02	−.03	.24**	.03	−.00	.00	(.82)		
9	OP_T2	2.35	1.04	.10**	−.03	−.03	.21**	.01	.02	.00	.75**		
10	OP_T3	2.44	1.04	.11**	−.05	−.04	.21**	.01	.01	.02	.73**	.77**	
11	PSS_T1	5.29	1.35	−.03	−.10**	−.09**	−.04	.42**	.37**	.33**	−.10**	−.10**	−.10**
12	PSS_T2	5.34	1.30	−.04	−.07*	−.06*	−.04	.33**	.41**	.33**	−.09**	−.11**	−.07*
13	PSS_T3	5.29	1.31	.01	−.07**	−.08**	−.04	.30**	.35**	.42**	−.10**	−.10**	−.08**
14	PCS_T1	5.47	1.01	−.17**	−.11**	−.09**	−.01	.36**	.35**	.32**	−.11**	−.08**	−.09**
15	PCS_T2	5.48	.98	−.10**	−.08**	−.06*	−.02	.34**	.41**	.35**	−.08**	−.08**	−.09**
16	PCS_T3	5.44	1.04	−.08**	−.05	−.01	−.05	.29**	.33**	.40**	−.10**	−.07*	−.09**
17	EX_T1	2.86	1.21	−.09**	−.06*	−.04	.04	−.33**	−.29**	−.27**	.27**	.24**	.24**
18	EX_T2	2.84	1.19	−.12**	−.09**	−.05	.02	−.33**	−.39**	−.35**	.23**	.28**	.25**
19	EX_T3	2.91	1.21	−.12**	−.09**	−.07*	.02	−.30**	−.33**	−.40**	.22**	.26**	.31**
20	CY_T1	2.54	1.23	.05	−.01	.02	−.03	−.38**	−.37**	−.37**	.13**	.11**	.10**
21	CY_T2	2.65	1.22	.03	−.07**	−.01	−.05	−.38**	−.44**	−.40**	.12**	.12**	.09**
22	CY_T3	2.66	1.22	.04	−.08**	−.02	−.02	−.34**	−.37**	−.47**	.16**	.14**	.15**

N = 1263, $^{**}p < .01$,$^{*}p < .05$, female = 1, male = 2, α = overall reliability (T1, T2, and T3) reported parenthetically (on the diagonal).

HP = harmonious passion; OP = obsessive passion; PSS = perceived supervisor support; PCS = perceived co-worker support; EX = emotional exhaustion; CY = cynicism.

		11	12	13	14	15	16	17	18	19	20	21	22	23
11	PSS_T1			(.93)										
12	PSS_T2			.72**										
13	PSS_T3			.64**	.70**									
14	PCS_T1			.43**	.37**	.36**	(.85)							
15	PCS_T2			.37**	.47**	.41**	.65**							
16	PCS_T3			.31**	.36**	.47**	.62**	.67**						
17	EX_T1			−.28**	−.20**	−.19**	−.20**	−.18**	−.17**	(.83)				
18	EX_T2			−.27**	−.26**	−.25**	−.21**	−.23**	−.22**	.76**				
19	EX_T3			−.26**	−.20**	−.28**	−.18**	−.18**	−.23**	.70**	.78**			
20	CY_T1			−.36**	−.31**	−.30**	−.29**	−.25**	−.25**	.50**	.46**	.43**	(.80)	
21	CY_T2			−.31**	−.38**	−.34**	−.30**	−.34**	−.31**	.43**	.55**	.45**	.68**	
22	CY_T3			−.24**	−.26**	−.36**	−.26**	−.27**	−.34**	.39**	.46**	.54**	.65**	.69**

N = 1263, **p < .01,*p < .05, female = 1, male = 2, α = overall reliability (T1, 2, and 3).

Table 2

Relationships of Harmonious and Obsessive Passion and Perceived Support with Exhaustion

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	β	SE	β	SE	β	SE	β	SE	β	SE
Level 2										
Intercept	.97***	.01	.96***	.01	1.14***	.065	1.23***	.06	1.25***	.06
Slope(time)			.01*	.05	.01**	.005	.01*	.00	.01**	.00
Gender					−.09***	.022	−.11***	.02	−.12***	.02
Age					−.00*	.001	−.00*	.00	−.00*	.00
Tenure					−.00	.001	−.00	.00	−.00	.00
Hour/week					.00**	.001	.00	.00	.00	.00
Sector					-.01	.01	-.00	01	-.00	.01
HP							−.10***	.01	−.09***	.01
HP*time							−.01*	.01	−.01*	.01
OP							.10***	.01	.09***	.01
OP*time							.00	.00	.00	.00
PSS									−.03***	.01
PCS									−.02**	.01
PSS*time									−.00	.01
PCS*time									.01	.01
PSS*OP									−.00	.01
PCS*OP									.00	.01
PSS*OP*time									−.00	.00
PCS*OP*time									.01	.01
Level 1										
Intercept	.13***	.01	.13***	.01	.14***	.01	.11***	.01	.11***	.01
Slope			.01***	.00	.01***	.00	.01***	.00	.01***	.00
Model Fit										
BIC					1848.83		1349.20		1358.61	
AIC (npar)	1841.24(3)		1804.26(6)		1780.19(11)		1255.60(15)		1215.09(23)	
ΔAIC			36.98***		24.07***		524.59***		40.50***	
PseudoR^2			.35		.35		.44		.45	
ICC	.74									

N = 1263, ***p < .001, **p < .01,*p < .05, female = 1, male = 2, private = 1, public = 2

HP = harmonious passion; OP = obsessive passion; PSS = perceived supervisor support; PCS = perceived co-worker support; EX = emotional exhaustion; CY = cynicism.

Table 3
Relationships of Harmonious and Obsessive Passion and Perceived Support with Cynicism

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	β	SE	β	SE	β	SE	β	SE	β	SE
Level 2										
Intercept	.86***	.01	.83***	.01	.92***	.07	.98***	.06	1.02***	.06
Slope (time)			.03***	.01	.03***	.01	.03***	.01	.03***	.01
Gender					.07**	.02	.06*	.02	.05*	.02
Age					−.01***	.00	−.01***	.00	−.01***	.00
Tenure					.00	.00	.00	.00	−.00	.00
H/w					−.00	.00	−.00*	.00	−.00*	.00
Sector					.02	.02	.03	.01	.03	.01
HP							−.14***	.01	−.09***	.01
HP*time							−.01	.01	−.02**	.01
OP							.05***	.01	.04***	.01
OP*time							.01	.01	.01	.01
PSS									−.07***	.01
PCS									−.04***	.01
PSS*time									−.01*	.01
PCS*time									−.00	.01
PSS*OP									−.00	.01
PCS*OP									.03**	.01
PSS*OP*time									.01	.01
PCS*OP*time									−.01*	.01
Level 1										
Intercept			.16**	.01	.15***	.01	.12***	.01	.11***	.01
Slope			.01**	.00	.01**	.00	.01**	.00	.01**	.00
Model Fit										
BIC					3301.05		2934.49		2810.87	
AIC (npar)	3274.27(3)		3243.81(6)		3232.41(11)		2840.89(15)		2667.35 (23)	
ΔAIC			30.46***		12.52**		388.65***		173.73***	
PseudoR^2			.16		.18		.36		.41	
ICC	.66									

N = 1263, ***p < .001, **p < .01,*p < .05, female = 1, male = 2, private = 1, public = 2

HP = harmonious passion; OP = obsessive passion; PSS = perceived supervisor support; PCS = perceived co-worker support; EX = emotional exhaustion; CY = cynicism.

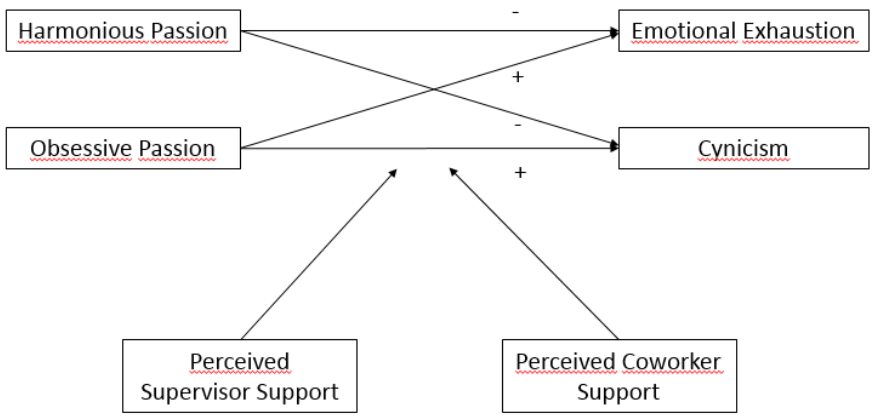

Figure 1. Empirical tested model

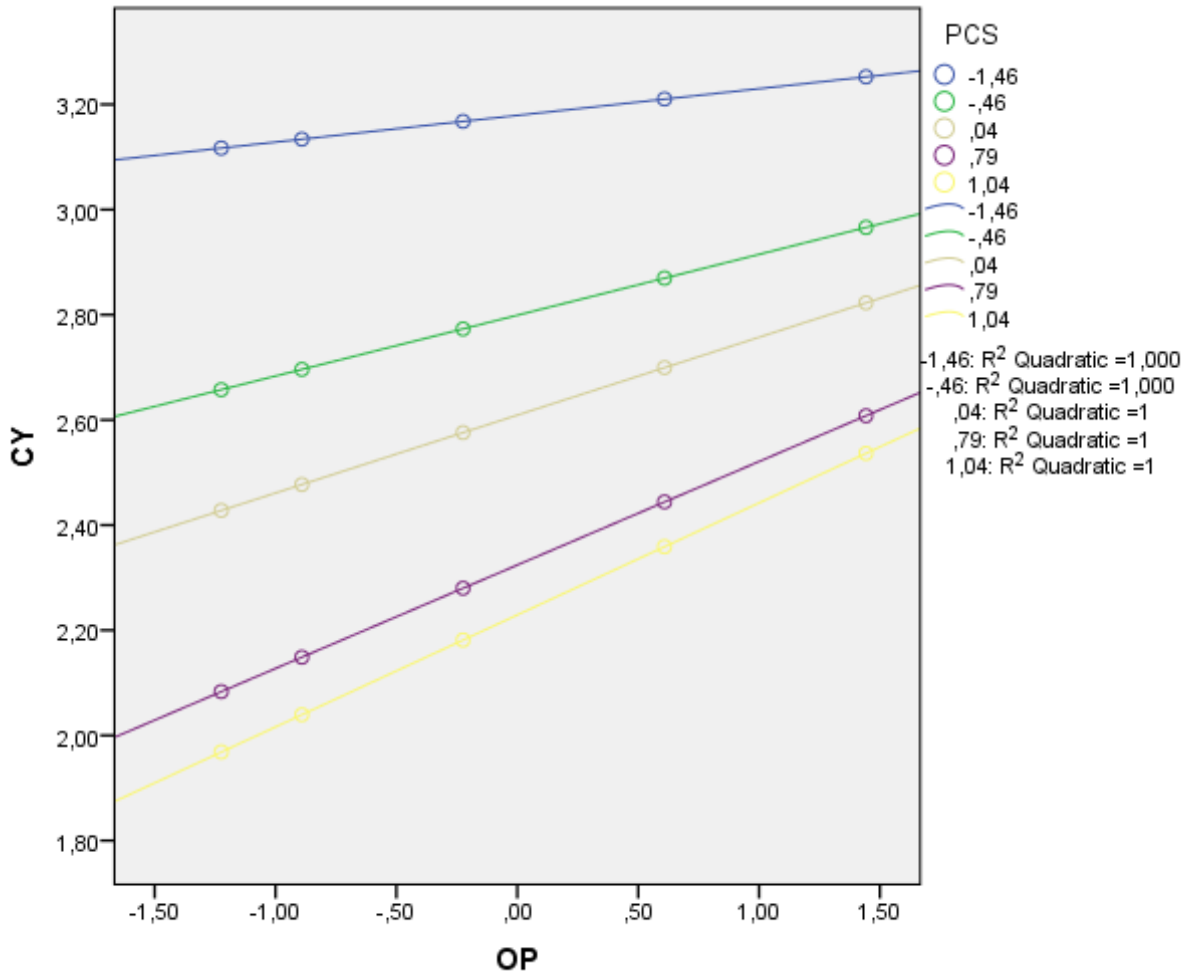

Figure 2. The role of perceived co-worker support in the relationship between obsessive passion and cynicism.

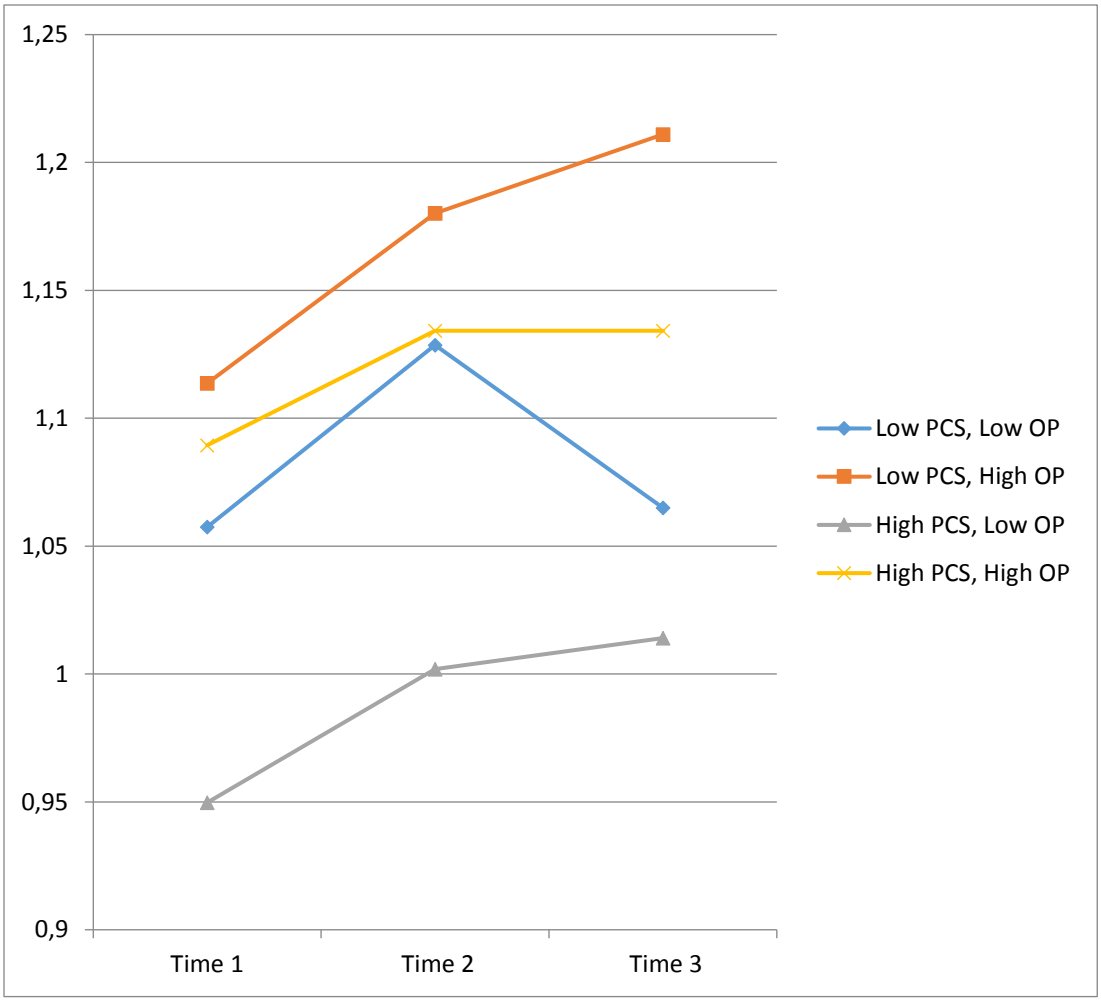

Figure 3. The role of perceived co-worker support in the relationship between obsessive passion and cynicism, over three time periods.