



## Workaholism profiles: Associations with determinants, correlates, and outcomes

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The present series of studies examines how the two dimensions of workaholism (working excessively and compulsively) combine within different profiles of workers. This research also documents the relations between these workaholism profiles and a series of correlates (psychological need thwarting) and adaptive and maladaptive work outcomes. In addition, this research investigates the role of emotional dissonance and employees' perceptions of their workplaces' psychosocial safety climate (Study 1,  $n = 465$ ), as well as job demands, resources, and perfectionism (Study 2,  $n = 780$ ) in the prediction of profile membership. Latent profile analysis revealed four identical workaholism profiles in both studies. In Study 1, emotional dissonance predicted a higher likelihood of membership in the Very High, Moderately High, and Moderately Low profiles relative to the Very Low profile. In contrast, Study 2 revealed a more diversified pattern of predictions. In both studies, levels of need thwarting were the highest in the Very High and Moderately High profiles, followed by the Moderately Low profile, and finally by the Very Low profile. Finally, in both studies, the most desirable outcomes levels (e.g., lower levels of work–family conflict and emotional exhaustion, and higher levels of perceived health) were associated with the Very Low profile, followed by the Moderately Low profile, then by the Moderately High profile, and finally by the Very High profile.

### Practitioner points

- The most desirable outcomes are associated with the profile characterized by the lowest levels of workaholism.
- Emotional dissonance predicts a lower likelihood of membership in the profile characterized by the lowest levels of workaholism.
- Levels of need thwarting are the lowest in the Very Low workaholism profile.
- High levels of socially prescribed perfectionism are associated with an increased likelihood of membership into the Very High workaholism profile.
- Reducing emotional dissonance, need thwarting, and socially prescribed perfectionism may help to reduce workaholism, in turn leading to more positive outcomes.

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Oates (1971) defined workaholism as ‘the compulsion or the uncontrollable need to work incessantly’ (p. 1). Machlowitz (1980) added that workaholics tend to allocate as much time as possible to work. Indeed, scholars (e.g., Schaufeli, Bakker, van der Heijden, & Prins, 2009; Schaufeli, Shimazu, & Taris, 2009) generally propose to differentiate the behavioural (i.e., being hardworking, spending a great deal of time in work activities, neglecting other spheres of life) and cognitive (i.e., being obsessed with work, thinking compulsively about work) facets of workaholism. Recently, research has started to examine how these two facets combine within specific individuals (Kravina, Falco, Girardi, & De Carlo, 2010; Schaufeli, Bakker *et al.*, 2009). Variable-centred analyses, designed to test how specific variables relate to other variables, are able to test for interactions among predictors (i.e., if the effect of a predictor differs as a function of another variable). However, through their focus on the identification of subgroups characterized by distinct configurations, or profiles, on a set of variables, person-centred analyses are more naturally suited to the consideration of the joint effect of variable combinations. This research extends prior studies of workaholism profiles (e.g., Buelens & Poelmans, 2004) by (1) simultaneously and exclusively considering the two behavioural (working excessively) and cognitive (working compulsively) facets of workaholism, rather than relying on a mixture of indicators conflating workaholism facets with other variables; (2) assessing the construct validity of the workaholism profiles through the consideration of correlates, predictors, and a wide range of attitudinal and health outcomes; and (3) relying on state-of-the-art latent profile analyses (LPA) rather than cluster analyses, which have been criticized (see Meyer & Morin, 2016), particularly for research involving covariates. Meyer and Morin (2016) emphasize the importance of clear *a priori* specifications of which covariates can be assumed to predict profile membership (predictors), to be predicted by it (outcomes), or to relate to the profiles with no assumption of directionality (correlates). However, although our treatment of covariates as correlates, determinants, and outcomes is theoretically anchored (Clark, Michel, Zhdanova, Pui, & Baltes, 2016; Schaufeli, Bakker *et al.*, 2009) and necessary for methodological reasons, our cross-sectional design precludes interpretations regarding the directionality of the associations.

### **Workaholism**

Workaholism can be seen as an addiction to work (e.g., Schaufeli, Shimazu, *et al.*, 2009; Spence & Robbins, 1992), leading to pre-occupations and compulsions regarding work, loss of self-control, and continued work engagement despite negative outcomes (Ng, Sorensen, & Feldman, 2007). Workaholic behaviours thus involve an excessive involvement in work that goes well beyond normal job requirements. Workaholics are also constantly obsessed with work, even when they are not working (Schaufeli, Bakker *et al.*, 2009). These two behavioural and cognitive facets of workaholism (working excessively and compulsively) are not mutually exclusive, but rather seen as complementary and co-existing to various degrees within individuals (Clark *et al.*, 2016). It thus follows that workaholism cannot be reduced to either of these two components. However, many studies have shown that the two dimensions of workaholism tend to be positively and moderately to strongly related (e.g., Huyghebaert *et al.*, 2016), leaving as an open research question whether these two forms of workaholism really represent distinct components.

So far, the predictive validity of working excessively and compulsively has been documented in relation to a variety of work outcomes in the context of variable-centred studies (for a meta-analysis, see Clark *et al.*, 2016). For instance, working compulsively

and excessively both share positive relations with employees' levels of emotional exhaustion, presenteeism, and work–family conflict, as well as negative relations with happiness and performance (Huyghebaert *et al.*, 2016; Schaufeli, Bakker *et al.*, 2009). However, limited research has looked at the combined effects of these two dimensions of workaholism on these important work-related outcomes. Interestingly, emerging person-centred research suggests that employees characterized by a high level on both dimensions tend to experience fewer sleeping hours and poorer sleep quality on weekdays and weekends, relative to those scoring high on only one dimension (Salanova *et al.*, 2016).

### **Workaholism profiles**

Variable-centred approaches examine relations occurring between variables, on the average, in a specific sample. In contrast, person-centred approaches identify homogeneous subgroups (or profiles) of workers sharing similar configurations of workaholism components. Therefore, the person-centred approach provides a complementary – yet uniquely informative – perspective on the same questions, focusing on individual profiles rather than on specific relations among variables (Marsh, Lüdtke, Trautwein, & Morin, 2009; Morin & Wang, 2016). In particular, person-centred analyses are naturally suited to the verification of how the two types of workaholism will be combined among different profiles of employees, and the relative consequences of membership into these various profiles. However, little person-centred research has been conducted on workaholism. Among the few available studies, Salanova, Del Libano, Llorens, and Schaufeli (2014) examined different profiles of well-being at work and identified a workaholic profile corresponding to employees characterized by moderate to high levels of energy, challenge, skills and identification, and by low levels of pleasure. Other investigations relied on a mixture of workaholism dimensions and additional constructs (Buelens & Poelmans, 2004; Spence & Robbins, 1992), making it impossible to identify workaholism configurations occurring independently from these additional dimensions.

Among the few relevant investigations, and despite some variations, four workaholism profiles have typically been identified (Kravina *et al.*, 2010; Salanova *et al.*, 2016): high levels of working compulsively and excessively (HC-HE), high levels of working compulsively and low levels of working excessively (HC-LE), low levels of working compulsively and high levels of working excessively (LC-HE), and low levels of working compulsively and excessively (LC-LE). For instance, Schaufeli, Bakker *et al.*, (2009) identified these four workaholism profiles and showed the HC-HE profile to be associated with the most unfavourable outcomes in terms of mental health (i.e., burnout, happiness, and recovery) and organizational behaviours (i.e., presenteeism and performance) (also see Kravina *et al.*, 2010). The reliance on cluster analyses is a key limitation of these studies. Indeed, cluster analyses have been previously criticized as showing a greater level of reactivity to the retained clustering algorithm, relying on rigid statistical assumptions, forcing the exact assignment of participants into a single profile (rather than taking into account participants' likelihood of membership in all profiles based on their prototypical similarity), and making it impossible to directly incorporate covariates into the model as predictors, correlates, or outcomes (for details, see Meyer & Morin, 2016; Morin, Morizot, Boudrias, & Madore, 2011)

The first purpose of the present research was thus to identify workaholism profiles using LPA, while simultaneously and exclusively considering the two facets of

workaholism proposed by Schaufeli, Shimazu *et al.* (2009). To the best of our knowledge, no research has yet relied on LPA to identify workaholism profiles. Still, in line with past cluster analytic studies, it was expected that a relatively small number of profiles (i.e., between four and five) corresponding to the four previously identified configurations (1. HC-HE; 2. LC-LE; 3. HC-LE; 4. LC-HE) would be identified.

### **Determinants of workaholism profiles**

Little research has investigated the structural determinants of workaholism profiles (Caesens, Stinglhamber, & Luypaert, 2014). The job demands–resources model (Bakker & Demerouti, 2007; Bakker, Demerouti, & Euwema, 2005) classifies job characteristics in two general categories, job demands and job resources, providing an overarching model applicable to any work contexts. Job demands refer to those aspects of a job that require sustained physical and/or psychological effort and are assumed to be associated with a variety of physiological and/or psychological costs. In contrast, job resources help employees to achieve work-related goals, thus helping to balance the costs associated with job demands and to stimulating personal development. Based on the job demands–resources model, Schaufeli, Bakker *et al.* (2009) tested the relations between job demands (work overload, mental demands, emotional demands) and resources (social support from colleagues, supervisory coaching, opportunities to learn), and workaholism profiles. Their results showed that higher levels of job demands and lower levels of job resources predicted a higher likelihood of membership into the HC-HE profile. Similarly, Kravina *et al.* (2010) showed that higher levels of time pressure were associated with a higher likelihood of membership into the HC-HE profile. Also based on the job demands–resources model, Molino, Bakker, and Ghislieri (2016) recently examined the determinants of workaholism. Results revealed that job demands (i.e., workload, cognitive demands, emotional demands, and customer-related social stressors) were positively related to workaholism. In addition, job resources (job security and opportunities for development) buffered the relations between job demands and workaholism. In sum, past studies showed that job demands and resources were significant determinants of workaholism. In the present research, we also examine the role of various job demands and resources in the prediction of the likelihood of membership into workaholism profiles and extend these prior investigations by considering a more extensive set of indicators of job demands (emotional dissonance in Study 1, role ambiguity in Study 2) and resources (psychosocial safety climate in Study 1, independence in Study 2).

Scott, Moore, and Miceli (1997) also suggested that some traits might be involved in the emergence of workaholism. Many others have similarly considered that workaholism may be influenced by personal characteristics (for a meta-analysis, see Clark *et al.*, 2016) such as self-esteem (Ng *et al.*, 2007) and perfectionism (Clark, Lelchook, & Taylor, 2010). More generally, dispositional traits are known to play a major role in the emergence of addictions (e.g., Eysenck, 1997). Still, irrespective of the fact that workaholism represents a form of addiction to work (Schaufeli, Shimazu, *et al.*, 2009; Spence & Robbins, 1992), very little attention has been paid to the effects of perfectionism on working compulsively and excessively. Thus, to increase our understanding of the role of individual characteristics, we also examine the links between self-oriented and socially prescribed perfectionism and the likelihood of membership into the various profiles in Study 2.

*Study 1: Emotional dissonance and perceptions of the psychosocial safety climate*

Emotional dissonance reflects a discrepancy between the emotions one feels and the emotions one is required to display (Holman, Chissick, & Totterdell, 2002). Emotional dissonance is experienced as a role conflict, leading to an unpleasant state of tension due to the inability to display authentic feelings (Hülshöger & Schewe, 2011). Emotional dissonance is linked to employees' feelings that they have not functioned optimally or in accordance with their values, and presents a known association with employees' tendencies to ruminate about their work and with their levels of working compulsively (Sonnentag & Bayer, 2005). Emotional dissonance is also an important form of job demand (Zapf, 2002), because it requires effortful regulatory processes (Baumeister, Bratslavsky, Muraven, & Tice, 1998) likely to disrupt workers' concentration on their tasks and increase their feelings of work overload. Emotional dissonance may thus directly increase the time spent at work as employees tend to catch up on what they perceive to be an unreasonable workload, thus leading to working excessively (Zohar, Tzischinski, & Epstein, 2003). Although no research has yet analysed the association between emotional dissonance and workaholism, Molino *et al.* (2016) showed that emotional demands were positively linked to workaholism. In line with these results, we hypothesized that emotional dissonance would predict a greater likelihood of membership in the HC-HE profile.

Psychosocial safety climate is defined as 'policies, practices, and procedures for the protection of worker psychological health and safety' (Dollard & Bakker, 2010, p. 580). Psychosocial safety climate stems emerges when organizations support stress prevention through involvement and commitment, and clearly communicate that employee psychological health and safety is as important as productivity (Hall, Dollard, & Coward, 2010). Recent research has shown that psychosocial safety climate was negatively correlated with job demands, such as work pressure (Bailey, Dollard, McLinton, & Richards, 2015; Law, Dollard, Tuckey, & Dormann, 2011). This result suggests that organizations with high psychosocial safety climate might implement more efficient built-in workload management procedures, thus possibly helping to reduce workaholism (Schaufeli, Bakker *et al.*, 2009). We thus hypothesized that perceptions of the psychosocial safety climate would be associated with a higher likelihood of membership in the LC-LE profile.

*Study 2: Job demands and resources, and perfectionism*

In Study 1, we considered the role of one type of job demand (emotional dissonance) and resource (psychosocial safety climate) in the prediction of workaholism profiles. In Study 2, we extend this investigation by considering a more extensive set of indicators of job demands (mental and emotional load, role ambiguity) and resources (support from colleagues, hierarchical support, independence). In line with aforementioned results (e.g., Kravina *et al.*, 2010; Molino *et al.*, 2016; Schaufeli, Bakker *et al.*, 2009), we hypothesized that job demands would predict a higher likelihood of membership in the HC-HE profile. Arguably, the more important job demands are, the more workers may be tempted to invest efforts and energy to meet these demands, possibly leading them to work excessively (Schaufeli, Taris, & van Rhenen, 2008). Important job demands may also generate anxiety regarding one's ability to meet them, leading employees to spend more time ruminating about work, possibly leading them to work compulsively (Huyghebaert *et al.*, 2016).



According to the conservation of resources theory, support from colleagues, hierarchical support, and independence are powerful resources to help maintain workers' well-being (Hobfoll, 1989) and their ability to manage job demands effectively (Spurk, Hirschi, & Kauffeld, 2016). Employees who feel supported by their supervisor and colleagues may not come to rely on destructive forms of work overinvestment compared to those who feel more isolated at work (Spurk *et al.*, 2016). Moreover, supervisor support has been found to be more frequently associated with a work environment where employees are not pushed to work extra hours, possibly leading to a reduced risk of workaholism (Mazzetti, Schaufeli, Guglielmi, & Depolo, 2016). Finally, workers who feel sufficiently independent at work may dispose of a greater level of latitude to deal with their job demands within regular work schedules without feeling compelled to go overboard (Molino *et al.*, 2016). Independence provides workers with opportunities to use their strengths without feeling that their personal resources are challenged or drained or that they need to spend a great deal of time at work or to obsess about it to avoid losing these resources. We thus hypothesized that job resources would predict a higher likelihood of membership into the LC-LE profile (Schaufeli, Bakker *et al.*, 2009).

Study 2 also focuses on the relations between self-oriented and socially prescribed perfectionism and the likelihood of membership into the various profiles. Self-oriented perfectionism is an internal drive to uphold exceedingly high personal standards and to criticize oneself harshly. Socially prescribed perfectionism comprises beliefs that others have high standards for oneself that must be met to achieve social acceptance (Hewitt & Flett, 1991). Because perfectionists are driven by strong strivings for perfection, it would be logical to assume that self-oriented and socially prescribed perfectionism would foster these two workaholism components. This link is supported by evidence showing that global perfectionism was associated with higher levels of workaholism (Clark *et al.*, 2016). Taris, van Beek, and Schaufeli (2010) further showed that the effect of socially prescribed perfectionism on global workaholism was stronger than that of self-oriented perfectionism. These results suggest that self-oriented and socially prescribed perfectionism should be important in the prediction of the likelihood of membership into the HC-HE profile. However, in line with Taris *et al.* (2010) and because socially prescribed perfectionism appears more detrimental than self-oriented perfectionism (Flett, Hewitt, & Heisel, 2014), we leave as an open research question whether the two forms of perfectionism would differentially relate to the workaholism profiles.

### **Outcomes of workaholism profiles**

To support a substantive interpretation of latent profiles as meaningful and relevant, it is critical to demonstrate that they relate to key outcomes and that they can be reliably replicated across samples (Marsh *et al.*, 2009; Meyer & Morin, 2016; Morin & Wang, 2016). The research was specifically designed to address this issue, allowing for a direct test of whether the profiles, as well as their relations with outcomes and correlates, would replicate across samples. We now turn our attention to the outcomes, which were selected to be both complementary and similar across studies. Specifically, attitudinal and health outcomes were assessed in the present series of studies (i.e., work–family conflict, emotional exhaustion, perceived stress, turnover intentions, psychological detachment, job satisfaction, and perceived health in Study 1, as well as work–family conflict, emotional exhaustion, perceived health, and life satisfaction in Study 2). First, we studied the effects of workaholism profiles on various work outcomes previously documented to be associated with workaholism (e.g., emotional exhaustion) across a variety of cultural

samples (e.g., Dutch: Schaufeli, Bakker *et al.*, 2009; Italian: Kravina *et al.*, 2010; Spanish: Salanova *et al.*, 2016). Second, we also considered outcomes already found to be related to workaholism, but only in the context of past variable-centred research in order to see whether these results would generalize to but person-centred studies (e.g., work–family conflict). Third and finally, to complement prior research, we considered three potential outcomes of workaholism profiles not assessed in past studies (i.e., turnover intentions, psychological detachment, and life satisfaction).

Prior research has documented associations between workaholism profiles and work outcomes. Schaufeli, Bakker *et al.* (2009) showed that the HC-HE profile reported the highest levels of burnout and presenteeism, and the lowest levels of recovery, happiness, and performance. In contrast, the LC-LE profile reported the lowest levels of burnout and presenteeism, and the highest levels of recovery, happiness, and performance. In addition, their results also showed that the HC-LE and LC-HE profiles did not differ in terms of recovery, happiness, presenteeism, and performance. Kravina *et al.* (2010) found that the HC-HE profile presented the highest levels of psychological strain and emotional exhaustion, while the HC-LE and LC-HE profiles did not differ on work satisfaction, emotional instability, and compliance. Salanova *et al.* (2016) showed that the HC-HE profile had lower sleep quantity and quality, as well as greater levels of alcohol use, and risk of cardiovascular difficulties. These relations may be explained by the conservation of resources theory (Hobfoll, 1989). Workaholics spend excessive amounts of time and energy on their work, leading to a state of extreme resource depletion, and leaving them with fewer resources to allocated to non-work activities (such as the family). Yet, when resources are threatened, lost, or not compensated, negative outcomes ensue (Hobfoll, 1989). Workers characterized by a HC-HE profile may thus display higher levels of ill-being and work–family conflict, and lower levels of satisfaction and performance.

Overall, these studies showed that the HC-HE profile was associated with the least adaptive outcomes, followed by the HC-LE and LC-HE profiles which are generally indistinguishable from one another, and finally by the LC-LE profile. We can thus expect attitudinal and health outcomes (i.e., Study 1: work–family conflict, emotional exhaustion, perceived stress, turnover intentions, psychological detachment, job satisfaction, and perceived health; Study 2: work–family conflict, emotional exhaustion, perceived health, and life satisfaction) to be differentially related to workaholism profiles. Based on prior research, we expect the HC-HE profile to be associated with the worst outcomes (Kravina *et al.*, 2010; Salanova *et al.*, 2016; Schaufeli, Bakker *et al.*, 2009).

### **Correlates of workaholism profiles**

Ryan and Deci's (2000) self-determination theory (SDT) clearly posits the role of work motivation in the prediction of workaholism (van Beek, Taris, & Schaufeli, 2011; Stoeber, Davis, & Townley, 2013). SDT distinguishes different types of motivation according to the degree to which workers embark in work-related behaviours for reasons that are autonomously driven or controlled by internal or external pressures (Gagné & Deci, 2005). Controlled motivation is seen as emerging from the thwarting of the basic psychological needs for autonomy (i.e., need to feel volitional and responsible), competence (i.e., need to feel efficient when interacting with others and to have opportunities to express one's abilities), and relatedness (i.e., need to feel socially secure and supported). Autonomous motivation is purported to emerge from the satisfaction of these three psychological needs (Ryan & Deci, 2000). In this research, we focus on psychological need thwarting, both for practical reasons of testing time (i.e., we did not

assess psychological need satisfaction to keep the length of the questionnaire manageable), but also because prior studies have shown that controlled motivation is more strongly correlated with workaholism than autonomous motivation (van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012; Van den Broeck *et al.*, 2011). In line with these considerations, we expect levels of need thwarting to be the highest in the HC-HE profile. Indeed, when the need of competence is thwarted, feelings of self-worth are low, possibly leading workers to increase their job involvement in order to prove themselves (Spence & Robbins, 1992). When workers feel oppressed (autonomy need thwarting), they may similarly increase their job involvement to better meet external demands (Ryan & Deci, 2000). When employees feel despised (relatedness need thwarting), their workload may increase as they cannot rely on others' support to cope with job requirements. These considerations suggest that need thwarting may be a predictor of workaholism (Schaufeli, Bakker *et al.*, 2009).

Still, research also suggests that need thwarting may also represent an outcome of workaholism, leading to our decision to position need thwarting as a correlate of workaholism profiles. Indeed, prior studies found high levels of workaholism to be linked to a lack of psychological detachment from work (Huyghebaert *et al.*, 2016). This inability to cognitively disconnect from work impedes employees' recovery process (Sonnentag & Fritz, 2007). On the one hand, when working excessively, workers consume their resources and have insufficient opportunities to recover from these efforts (Sonnentag & Bayer, 2005). On the other hand, when working compulsively, workaholics are not able to psychologically disengage from work at home and more likely to become anxious and ruminate about work (van Beek *et al.*, 2011). As a result, employees who do not psychologically detach from work come back to work in a physical and affective state that impedes their performance (Sonnentag & Fritz, 2007), possibly leading them to develop a sense of worthlessness (competence need thwarting). Workaholics also generally feel a lack of control over their work (Ng *et al.*, 2007), which they try to compensate by their over-involvement. Similar to obsessive work passion, workaholism results from the controlled internalization of work into one's identity (Vallerand *et al.*, 2003). As a result, workaholics feel compelled to engage in work, leading to a reduced sense of volition (autonomy need thwarting). Finally, workaholics generally refuse to delegate work or to seek help, and fail to pay attention to others (Schaufeli *et al.*, 2008). Such behaviours are likely to lead to a sense of social isolation or disconnection from others (relatedness need thwarting).

### **The present research**

The present research examines how working compulsively and excessively combines within different subgroups of workers. In two studies based on independent samples, we also examine the links between the workaholism profiles and the thwarting of psychological needs for autonomy, competence, and relatedness represented as correlates. This research considers the role of emotional dissonance and psychosocial safety climate (Study 1) as well as self-oriented and socially prescribed perfectionism, and job demands and resources (Study 2), in the prediction of workers' likelihood of membership into workaholism profiles. Finally, to better document the construct validity and practical relevance of the identified profiles, we assess how they relate to a variety of attitudinal and health outcomes including work-family conflict, emotional exhaustion, perceived stress, turnover intentions, psychological detachment, job satisfaction,



and perceived health in Study 1, as well as work–family conflict, emotional exhaustion, perceived health, and life satisfaction in Study 2.

## STUDY I

### Method

#### *Participants and procedure*

Undergraduate students collected the data related to this project. They distributed a paper-based questionnaire to a convenience sample of 465 workers (182 men; 283 women) from various organizations (e.g., public hospitals, industries, sales, and services) located in France. In each organization, participants received a survey packet including the questionnaire, a cover letter explaining the study's purposes, and a consent form stressing that participation was anonymous and voluntary. Questionnaires required approximately 20 min to complete. Completed questionnaires were returned to the undergraduate students. No incentive was offered to take part in the study. This sample included 113 participants employed in the public sector (24.3%) and 352 employed in the private sector (75.7%). Respondents were aged between 18 and 62 years ( $M = 38.49$ ,  $SD = 13.07$ ), had an average organizational tenure of 11.05 years ( $SD = 10.97$ ), and an average tenure in the current position of 6.93 years ( $SD = 7.51$ ). A total of 368 participants were full-time workers (79.1%), whereas 380 participants were permanent workers (81.7%) and 85 were temporary workers (18.3%). Sixteen participants (3.4%) had no diploma, 117 had a vocational training certificate (25.2%), 146 had a high school diploma (31.4%), and 186 had a university diploma (40.0%).

#### *Measures*

*Workaholism.* Working compulsively (five items,  $\alpha = .76$ ; e.g., 'I find myself continuing to work after my co-workers have called it quits') and excessively (five items,  $\alpha = .75$ ; e.g., 'I feel that there is something inside me that drives me to work hard') were measured using the French version (Sandrin & Gillet, 2016) of the Dutch Workaholism Scale (Schaufeli, Shimazu, *et al.*, 2009). Items were rated on a 7-point scale ranging from 1 (never) to 7 (always).

*Need thwarting (correlate).* Need thwarting was assessed with the nine-item Psychological Need Thwarting at Work Scale (Gillet, Fouquereau, Lequeurre, Bigot, & Mokoukolo, 2012). Three items each assessed the needs for competence ( $\alpha = .80$ ; e.g., 'It happens that I hear things that make me feel incompetent'), autonomy ( $\alpha = .75$ ; e.g., 'I feel forced to behave in a certain way'), and relatedness ( $\alpha = .81$ ; e.g., 'I think other people hate me'). Items were rated on a 7-point scale (1 – strongly disagree to 7 – strongly agree).

*Psychosocial safety climate (predictor).* The 12-item Psychosocial Safety Climate scale (Hall *et al.*, 2010) was used to assess four interrelated facets (three items each): (1) managerial commitment (e.g., 'Senior management considers employee psychological health to be as important as productivity'), (2) managerial priority (e.g., 'Senior management clearly considers the psychological health of employees to be of great importance'), (3) organizational communication (e.g., 'There is good communication

here about psychological safety issues which affect me'), and (4) organizational participation (e.g., 'Employees are encouraged to become involved in psychological safety and health matters'). These items were rated on a 5-point scale (1 – strongly disagree to 5 – strongly agree) and used to assess a single global construct ( $\alpha = .94$ ; Bailey, Dollard, & Richards, 2015).

*Emotional dissonance (predictor).* Emotional dissonance was assessed with five items ( $\alpha = .86$ ; e.g., 'Having to show certain feelings that do not correspond with the way I feel at that moment') from the Frankfurt Emotion Work Scale (Zapf, Vogt, Seifert, Mertini, & Isic, 1999) rated on a 5-point scale ranging from 1 (never) to 5 (always).

*Work–family conflict (outcome).* Work–family conflict was measured with a three-item subscale ( $\alpha = .89$ ; e.g., 'How often does it happen that your work schedule makes it difficult for you to fulfill your domestic obligations?') from the Survey Work Home Interaction Nijmegen (Demerouti, Bakker, & Bulters, 2004). Items were rated on a 7-point scale (1 – totally disagree to 7 – totally agree).

*Emotional exhaustion (outcome).* Emotional exhaustion was assessed with a five-item version ( $\alpha = .86$ ; e.g., 'I feel emotionally drained by my work') of the Maslach Burnout Inventory-General Survey (Schaufeli, Leiter, Maslach, & Jackson, 1996). All items were rated on a 1 (strongly disagree) to 5 (strongly agree) response scale.

*Perceived stress (outcome).* Perceived stress was assessed with the four-item ( $\alpha = .72$ ; e.g., 'How often have you felt that you were unable to control the important things in your life?') version of the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983). Items were rated referring to the last month on a 5-point response scale (1 – never to 5 – always).

*Turnover intentions (outcome).* Turnover intentions were assessed with three items ( $\alpha = .90$ ; e.g., 'I often think about quitting this organization') developed by Bentein, Vandenberg, Vandenberghe, and Stinglhamber (2005) and rated on a 5-point response scale (1 – strongly disagree to 5 – strongly agree).

*Psychological detachment (outcome).* Psychological detachment was assessed with a scale developed by Sonnentag and Fritz (2007). Following a common stem (i.e., 'In the evening, after work, and when I am on a weekend/vacation. . .'), four items ( $\alpha = .91$ ; e.g., 'I forget about work') were rated on a 5-point scale ranging from 1 (totally disagree) to 5 (totally agree).

*Job satisfaction (outcome).* Job satisfaction was assessed with three items ( $\alpha = .76$ ; e.g., 'I am satisfied with my job') of the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983), rated on a 5-point scale (1 – strongly disagree to 5 – strongly agree).

*Perceived health (outcome).* Perceived health was assessed with four items ( $\alpha = .82$ ) based on the Medical Outcome Study (Stewart & Ware, 1992). Participants were asked to answer the following questions: ‘In general, would you say your health is excellent, very good, good, fair, or poor?’ (from 1 – poor to 5 – excellent), ‘To what extent do you have any particular health problems?’ (from 1 – no extent to 5 – a very great extent), ‘Thinking about the past 2 months, how much of the time has your health kept you from doing the kind of things other people your age do?’ (from 1 – none of the time to 5 – all of the time), and ‘To what extent do you feel healthy enough to carry out things that you would like to do?’ (from 1 – no extent to 5 – a very great extent). The scoring of the second and third items was reversed so that a higher score represents better health.

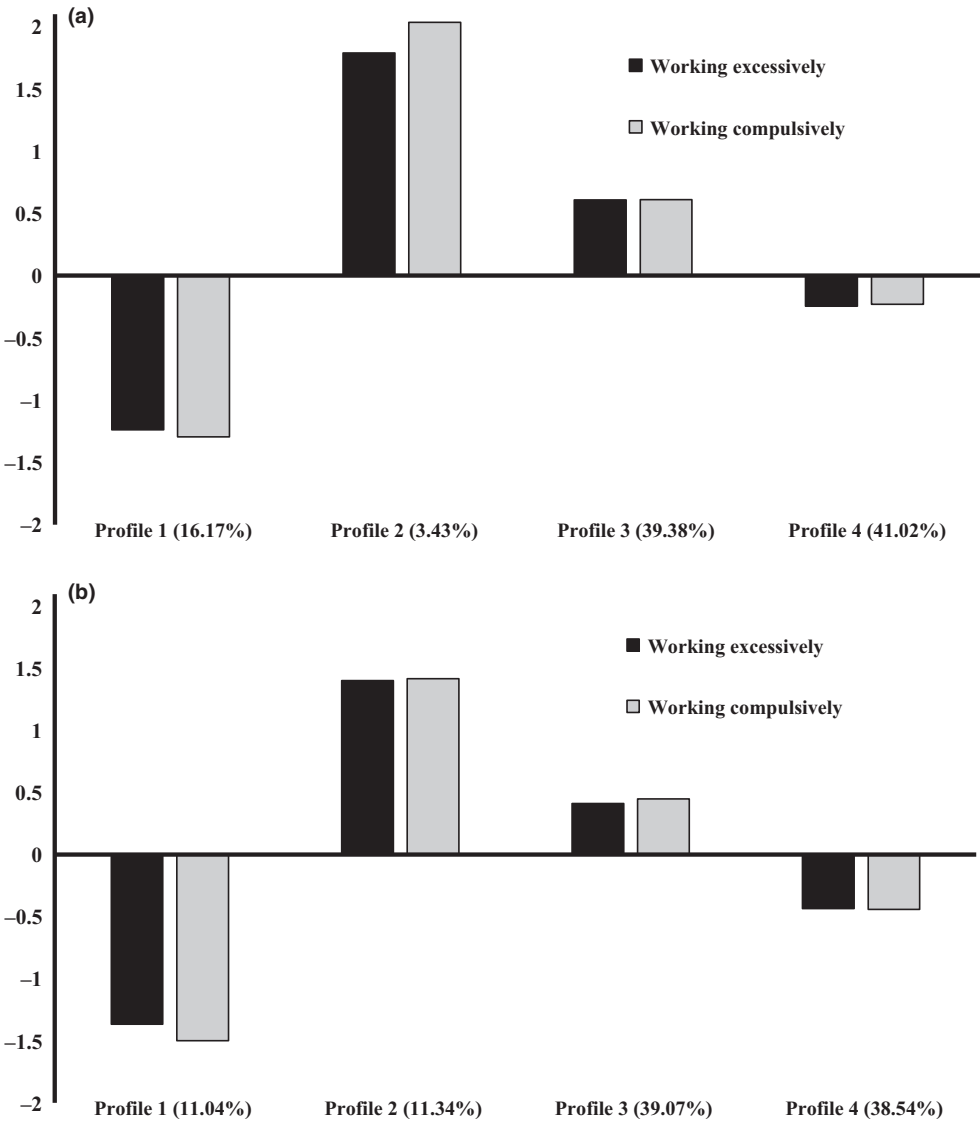
### Analyses

*Preliminary analyses.* The psychometric properties of all measures were verified through preliminary factor analyses reported in the Data S1. These preliminary analyses were used to generate factor scores (estimated in standardized units with  $M = 0$  and  $SD = 1$ ), which are the variables used for the main analyses (for details on the advantages of factor scores, see Meyer & Morin, 2016; Morin, Meyer, Creusier, & Biétry, 2016). Factor scores do not explicitly control for measurement errors the way latent variables do, but provide a partial control for measurement errors by giving more weight to items presenting lower residuals (Skrondal & Laake, 2001), and preserve the underlying nature of the measurement model better than scale scores (Morin *et al.*, 2016). Correlations for all of these factor scores, as well as their estimates of composite reliability obtained using McDonald (1970) omega ( $\omega = .589$  to  $.958$ ;  $M = .853$ ), are reported in Table S5 of the Supporting information. The fact that some estimates of composite reliability appear suboptimal reinforces the importance of adopting a method providing some level of control for measurement errors.

*Latent profile analyses (LPA).* LPA including one to eight latent profiles were estimated using Mplus 7.4 (Muthén & Muthén, 2016) robust maximum-likelihood estimator (MLR). To avoid converging on a suboptimal local maximum, all LPA were conducted using 5,000 random sets of start values and 1,000 iterations, with the 200 best solutions retained for final-stage optimization (Hipp & Bauer, 2006). In all LPA, the means and variances of the workaholism factor scores were freely estimated (Diallo, Morin, & Lu, 2016; Morin *et al.*, 2011). The procedure used to select the optimal number of profiles is disclosed in the Data S2.

*Correlates, predictors, and outcomes.* Following Meyer and Morin (2016; also see Morin, 2016), the associations between the latent profiles and the covariates were tested using methods appropriate to their status as predictors, correlates, or outcomes. Multinomial logistic regressions were conducted to test the relations between the predictors and the likelihood of membership into the various profiles. In multinomial logistic regressions, each predictor is associated with  $k-1$  ( $k =$  number of profiles) regression coefficients related to the comparison of each profile to all other profiles. These regression coefficients represent the effects of the predictors on the log-odds of the outcome (i.e., the pairwise probability of membership in one profile versus another in

logarithmic units) for a one-unit increase in the predictor. Odds ratios (OR) are also reported and reflect changes in the likelihood of membership in a target profile versus a comparison profile for each unit increase in the predictor. Levels of correlates were contrasted using a Mplus AUXILIARY (e) function, which tests the equality of means across profiles through a Wald test based on pseudo-class draws (Asparouhov & Muthén, 2007), without assuming any directionality of associations (Meyer & Morin, 2016; Morin, 2016). Outcomes levels were contrasted using a model-based approach proposed by



**Figure 1.** (a) Final four-profile solution observed in Study 1. (b) Final four-profile solution observed in Study 2. *Note.* The profile indicators are estimated from factor scores with mean of 0 and a standard deviation of 1; Profile 1: Very Low; Profile 2: Very High; Profile 3: Moderately High; Profile 4: Moderately Low.

Lanza, Tan, and Bray (2013) and implemented through the Auxiliary (DCON) function (Asparouhov & Muthén, 2014).

## **Results**

### ***Latent profiles***

The results revealed a four-profile solution, which is graphically depicted in Figure 1a (detailed parameter estimates are reported in Table S8 of the Supporting information). All four profiles mainly differ on the global level of workaholism that characterizes them, rather than showing clear qualitative differences based on specific dimensions of workaholism. Thus, Profile 1 describes 16.17% of the employees presenting a very low level of workaholism, whereas Profile 2 describes a smaller proportion (3.43%) of the employees presenting a very high level of workaholism. The remaining profiles are larger, and less extreme, respectively, characterizing employees presenting moderately high (39.38%), or moderately low (41.02%), levels of workaholism.

### ***Predictors of profile membership***

Predictors were added to this final four-profile model. The results from this multinomial logistic regression are reported in the top section of Table 1. These results show that participants' levels of emotional dissonance provide a well-differentiated pattern of association with the profiles, being associated with a higher likelihood of membership in the Very High (2), Moderately High (3), and Moderately Low (4) profiles relative to the Very Low (1) profile, as well as into the Very High (2) and Moderately High (3) profiles relative to the Moderately Low (4) profile. However, emotional dissonance did not differentially predict membership into the Very High (2) relative to the Moderately High (3) profiles. In contrast, participants' perceptions of their workplace psychosocial safety climate showed no significant association with profile membership.

### ***Correlates of profile membership***

The within-profile means of each correlate, together with their 95% confidence intervals, are reported in the top section of Table 2. Levels of need thwarting tended to be the highest in the Very High (2) and Moderately High (3) profiles, which were indistinguishable from one another, followed by the Moderately Low (4) and then by the Very Low (1) profiles, which could be differentiated on their levels of autonomy and competence (but not relatedness) need thwarting. Relatedness need thwarting showed the fewest differences, being only significantly higher in the Moderately High (3) relative to the Very Low (1) profile.

### ***Outcomes of profile membership***

The within-profile means of each outcome, together with their 95% confidence intervals, are reported in the bottom section of Table 2. These results were very consistent across outcomes and showed that the most desirable outcomes levels (lower levels of work–family conflict, emotional exhaustion, perceived stress, and



**Table 1.** Results from multinomial logistic regressions for the effects of the predictors on profile membership

	Profile 1 vs. Profile 4		Profile 2 vs. Profile 4		Profile 3 vs. Profile 4		Profile 1 vs. Profile 3		Profile 2 vs. Profile 3		Profile 1 vs. Profile 2	
	Coef. (SE)	OR	Coef. (SE)	OR	Coef. (SE)	OR	Coef. (SE)	OR	Coef. (SE)	OR	Coef. (SE)	OR
<b>Study 1</b>												
Psychosocial safety climate	-0.012 (0.213)	0.988	-0.636 (0.497)	0.530	-0.194 (0.184)	0.824	0.182 (0.194)	1.200	-0.441 (0.479)	0.643	0.624 (0.506)	1.866
Emotional dissonance	-0.794 (0.208)**	0.452	1.741 (0.887)*	5.701	0.577 (0.177)**	1.781	-1.371 (0.250)**	0.254	1.163 (0.899)	3.200	-2.534 (0.923)**	0.079
<b>Study 2</b>												
Self-oriented perfectionism	-0.328 (0.405)	0.721	0.210 (0.715)	1.233	0.117 (0.919)	1.124	-0.445 (0.661)	0.641	0.093 (1.543)	1.097	-0.537 (1.007)	0.584
Socially prescribed perfectionism	-0.518 (0.331)	0.596	1.753 (0.371)**	5.770	0.666 (1.236)	1.947	-1.184 (1.184)	0.306	1.086 (1.391)	2.962	-2.271 (0.498)**	0.103
Mental load	0.090 (0.247)	1.094	0.950 (0.818)	2.585	0.511 (0.592)	1.666	-0.421 (0.722)	0.656	0.439 (1.365)	1.551	-0.860 (0.718)	0.423
Emotional load	-0.419 (0.216)	0.658	0.358 (0.318)	1.430	0.180 (0.162)	1.197	-0.598 (0.198)**	0.550	0.178 (0.276)	1.195	-0.776 (0.278)**	0.460
Role ambiguity	-0.069 (0.231)	0.933	0.230 (0.470)	1.259	0.106 (0.181)	1.111	-0.175 (0.262)	0.839	0.124 (0.519)	1.132	-0.299 (0.428)	0.742
Independence	0.520 (0.341)	1.681	0.184 (0.300)	1.201	0.013 (0.453)	1.013	0.507 (0.306)	1.660	0.171 (0.301)	1.186	0.336 (0.297)	1.399
Support from colleagues	-0.046 (0.357)	0.955	-0.285 (0.425)	0.752	-0.494 (0.206)*	0.610	0.448 (0.434)	1.565	0.209 (0.506)	1.232	0.239 (0.319)	1.270
Hierarchical support	-0.181 (0.400)	0.834	0.264 (0.651)	1.302	0.362 (0.158)*	1.435	-0.543 (0.380)	0.581	-0.097 (0.635)	0.908	-0.446 (0.428)	0.640

Note. SE = Standard Error of the coefficient; OR = Odds Ratio.

The coefficients and OR reflect the effects of the predictors on the likelihood of membership into the first listed profile relative to the second listed profile. Predictors are estimated from factor scores with mean of 0 and a standard deviation of 1. Profile 1: Very Low; Profile 2: Very High; Profile 3: Moderately High; Profile 4: Moderately Low.

\* $p < .05$ ; \*\* $p < .01$ .

**Table 2.** Associations between profile membership, the correlates, and the outcomes

	Profile 1 M (CI)	Profile 2 M (CI)	Profile 3 M (CI)	Profile 4 M (CI)	Summary of significant differences
<b>Study 1: Correlates</b>					
Competence need thwarting	-0.337 (-0.549; -0.125)	0.512 (-0.135; 1.159)	0.234 (0.105; 0.363)	-0.050 (-0.173; 0.073)	2 = 3 > 1; 2 = 4 > 1; 3 > 4
Autonomy need thwarting	-0.553 (-0.778; -0.328)	0.681 (0.113; 1.249)	0.362 (0.239; 0.485)	-0.185 (-0.305; -0.065)	2 = 3 > 4 > 1
Relatedness need thwarting	-0.106 (-0.322; 0.110)	0.319 (-0.273; 0.911)	0.148 (0.019; 0.277)	-0.030 (-0.161; 0.101)	3 > 1; 1 = 2 = 4; 2 = 3 = 4
<b>Study 2: Correlates</b>					
Competence need thwarting	-0.552 (-0.785; -0.319)	0.541 (0.339; 0.743)	0.128 (0.030; 0.226)	-0.139 (-0.241; -0.037)	2 > 3 > 4 > 1
Autonomy need thwarting	-0.568 (-0.793; -0.343)	0.567 (0.359; 0.775)	0.184 (0.086; 0.282)	-0.131 (-0.227; -0.035)	2 > 3 > 4 > 1
Relatedness need thwarting	-0.478 (-0.678; -0.278)	0.438 (0.230; 0.646)	0.164 (0.066; 0.262)	-0.082 (-0.178; 0.014)	2 > 3 > 4 > 1
<b>Study 1: Outcomes</b>					
Work-Family conflict	-0.668 (-0.829; -0.507)	0.981 (0.573; 1.389)	0.397 (0.274; 0.520)	-0.129 (-0.243; -0.015)	2 > 3 > 4 > 1
Emotional exhaustion	-0.675 (-0.844; -0.506)	1.301 (0.911; 1.691)	0.411 (0.293; 0.529)	-0.157 (-0.263; -0.051)	2 > 3 > 4 > 1
Perceived stress	-0.472 (-0.656; -0.288)	1.067 (0.648; 1.486)	0.254 (0.136; 0.372)	-0.110 (-0.226; 0.006)	2 > 3 > 4 > 1
Turnover intentions	-0.168 (-0.333; -0.003)	0.840 (0.423; 1.257)	0.190 (0.070; 0.310)	0.029 (-0.081; 0.139)	2 > 3 > 4 > 1
Psychological detachment	0.641 (0.474; 0.808)	-0.892 (-1.270; -0.514)	-0.327 (-0.447; -0.207)	0.115 (-0.005; 0.235)	1 > 4 > 3 > 2

Continued

**Table 2.** (Continued)

	Profile 1 M (CI)	Profile 2 M (CI)	Profile 3 M (CI)	Profile 4 M (CI)	Summary of significant differences
Job satisfaction	0.229 (0.051; 0.407)	-0.718 (-1.161; -0.275)	-0.179 (-0.302; -0.056)	0.053 (-0.063; 0.169)	1 = 4 > 3 > 2
Perceived health	0.192 (0.000; 0.384)	-0.496 (-0.943; -0.049)	-0.177 (-0.306; -0.048)	0.099 (-0.023; 0.221)	1 = 4 > 3 = 2
<b>Study 2: Outcomes</b>					
Work-Family conflict	-1.062 (-1.187; -0.937)	0.967 (0.828; 1.106)	0.243 (0.159; 0.327)	-0.312 (-0.400; -0.224)	2 > 3 > 4 > 1
Emotional exhaustion	-0.712 (-0.863; -0.561)	0.933 (0.778; 1.088)	0.162 (0.060; 0.264)	-0.207 (-0.295; -0.119)	2 > 3 > 4 > 1
Life satisfaction	0.404 (0.235; 0.573)	-0.311 (-0.507; -0.115)	-0.120 (-0.224; -0.016)	0.064 (-0.042; 0.170)	1 > 4 > 3 = 2
Perceived health	0.255 (0.088; 0.422)	-0.295 (-0.477; -0.113)	-0.153 (-0.249; -0.057)	0.115 (0.019; 0.211)	1 = 4 > 3 = 2

Note. M = Mean; CI = 95% Confidence Interval.

Correlates and outcomes are estimated from factor scores with mean of 0 and a standard deviation of 1. Profile 1: Very Low; Profile 2: Very High; Profile 3: Moderately High; Profile 4: Moderately Low.

turnover intentions, or higher levels of psychological detachment, job satisfaction, and perceived health) tended to be associated with the Very Low (1) profile, followed by the Moderately Low (4) profile, then by the Moderately High (3) profile, and finally by the Very High (2) profile, with most comparisons being statistically significant. Among the very few exceptions, levels of job satisfaction and perceived health were indistinguishable between the Very Low (1) and Moderately Low (4) profiles, and levels of perceived health were indistinguishable between the Very High (2) and Moderately High (3) profiles.

## STUDY 2

### Method

#### *Participants and procedure*

This study relied on data collection procedures identical to those used in Study 1. In this study, a questionnaire was completed by a sample of 780 workers (307 men; 473 women) from various organizations located in France and independent from the one used in Study 1. This sample included 197 participants employed in the public sector (25.3%) and 583 employed in the private sector (74.7%). Respondents were aged between 18 and 64 years ( $M = 37.03$ ,  $SD = 10.67$ ), had an average organizational tenure of 8.76 years ( $SD = 8.67$ ), and an average tenure in the current position of 5.34 years ( $SD = 5.96$ ). A total of 691 participants were full-time workers (88.6%), whereas 677 participants were permanent workers (86.8%) and 103 were temporary workers (13.2%). Fourteen participants (1.8%) had no diploma, 123 had a vocational training certificate (15.8%), 152 had a high school diploma (19.5%), and 491 had a university diploma (62.9%).

#### *Measures*

Workaholism, need thwarting (correlate), emotional exhaustion, perceived health, and work–family conflict (outcomes) were assessed as in Study 1.

*Perfectionism (predictor).* A 10-item version of the Multidimensional Perfectionism Scale (Gaudreau & Verner-Filion, 2012; Hewitt & Flett, 1991) was used to assess self-oriented (five items,  $\alpha = .85$ ; e.g., ‘I do whatever is possible to be as perfect as I can’) and socially prescribed (five items,  $\alpha = .80$ ; e.g., ‘I feel that people are demanding too much of me’) perfectionism. These items were rated on a response scale ranging from 1 (strongly disagree) to 7 (strongly agree).

*Job demands and resources (predictors).* Mental load (four items,  $\alpha = .84$ ; e.g., ‘Do you have to give continuous attention to your work?’), emotional load (four items,  $\alpha = .75$ ; e.g., ‘Does your work put you in emotionally upsetting situations?’), role ambiguity (four items,  $\alpha = .71$ ; e.g., ‘Do you know exactly for what you are responsible and which areas are not your responsibility?’), support from colleagues (four items,  $\alpha = .85$ ; e.g., ‘Can you count on your colleagues when you encounter difficulties in your work?’), hierarchical support (four items,  $\alpha = .90$ ; e.g., ‘Is there a good atmosphere between you and your supervisor?’), and independence (four items,  $\alpha = .81$ ; e.g., ‘Can you decide the

order in which you carry out your work on your own?') were measured with six subscales from a comprehensive measure developed and validated by Lequeurre, Gillet, Ragot, and Fouquereau (2013). Responses were provided on a 7-point response scale ranging from 1 (never) to 7 (always).

*Life satisfaction (outcome).* Life satisfaction was assessed with the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Each of the five items ( $\alpha = .88$ ; e.g., "I am satisfied with my life") was rated on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

### *Analyses*

The current study relied on an analytical strategy that parallels that used in Study 1. Correlations among all variables and composite reliability coefficients ( $\omega = .605$  to  $.930$ ;  $M = .836$ ) are reported in Table S6 of the Supporting information. Details on the preliminary analyses used to generate factor scores and select the optimal number of profiles are reported in the Data S2.

## **Results**

### ***Latent profiles***

The results revealed a four-profile solution, which is graphically depicted in Figure 1b (detailed parameter estimates are reported in Table S9 of the Supporting information). More precisely, they showed profiles that were almost identical, both in shape and in size, to those identified in Study 1 and characterizing employees presenting Very Low (Profile 1: 11.04%), Very High (Profile 2: 11.34%), Moderately High (Profile 3: 39.07%), and Moderately Low (Profile 4: 38.54%) levels of workaholism.

### ***Predictors of profile membership***

Predictors were added to this four-profile model. The results from this multinomial logistic regression are reported in the bottom section of Table 1. Surprisingly, very few of these predictors were significant, supporting the idea that the identification of meaningful predictors of workaholism is seldom a simple matter. These results show that, while participants' levels of self-oriented perfectionism show no significant association with profile membership, their levels of socially prescribed perfectionism are associated with a higher likelihood of membership in the Very High (2) profile relative to both the Moderately Low (4) and Very Low (1) profiles. Interestingly, the results also show that, whereas participants' levels of mental load show no significant association with profile membership, their levels of emotional load also predict a higher likelihood of membership in the Very High (2) and Moderately High (3) profiles relative to the Very Low (1) profile. Participants' levels of support from their colleagues predict a higher likelihood of membership into the Moderately Low (4) profile relative to the Moderately High (3) profile, whereas their levels of hierarchical support predict a higher likelihood of membership into the Moderately High (3) profile relative to the Moderately Low (4) profile. Finally, participants' role ambiguity and independence are not associated with the likelihood of membership into any of the profiles.



### **Correlates of profile membership**

The within-profile means of each correlate, together with their 95% confidence intervals, are reported in the top section of Table 2. These results replicate those of Study 1 in terms of the ordering of need thwarting levels between the profiles, with the exception that all comparisons proved to be significant when estimated in this larger sample. Participants' levels of need thwarting tended to be the highest in the Very High (2) profile, followed by the Moderately High (3) profile, then by the Moderately Low (4) profile, and finally by the Very Low (1) profile.

### **Outcomes of profile membership**

The within-profile means of each outcome, together with their 95% confidence intervals, are reported in the bottom section of Table 2. These results once again replicate those from Study 1, showing that the most desirable outcomes levels (lower levels of work–family conflict and emotional exhaustion, or higher levels of life satisfaction and perceived health) were associated with the Very Low (1) profile, followed by the Moderately Low (4) profile, then by the Moderately High (3) profile, and finally by the Very High (2) profile. Among the very few exceptions, we note that levels of life satisfaction and perceived health were indistinguishable between Very High (2) and Moderately High (3) profiles, and levels of perceived health were also indistinguishable between the Very Low (1) and Moderately Low (4) profiles.

## **GENERAL DISCUSSION**

In the present series of studies, we relied on a multidimensional conceptualization of workaholism, implying that workaholism is constituted by the combination of working excessively and working compulsively (Schaufeli, Shimazu, *et al.*, 2009). According to Schaufeli, Bakker *et al.* (2009) and in line with past person-centred studies (Kravina *et al.*, 2010; Salanova *et al.*, 2016), it follows that workaholism cannot be reduced to either of these two components. Many studies have shown that the two dimensions of workaholism are positively and moderately to strongly related (e.g., Huyghebaert *et al.*, 2016), yet the added value of considering these two components, rather than a single combined score of workaholism, remained unknown. In addition, relatively little attention has been allocated to understanding the combined effects of the two components of workaholism, relative to the effects of displaying a single of these components among workers. In other words, it appeared critical to understand the true consequences of displaying high levels of both working excessively and working compulsively for workers and organizations. The reliance on a person-centred approach appeared to be particularly well-suited to these considerations, providing a way to assess how these two types of workaholism are combined among different profiles of employees, and the relative consequences of membership into these various profiles.

Our first purpose was to identify workaholism profiles based on the two facets of workaholism (working compulsively and excessively) proposed by Schaufeli, Shimazu *et al.* (2009). Our results revealed that four distinct profiles best represented the workaholism configurations among two independent samples of French workers. Two of these profiles met our expectations and results from prior studies (e.g., Kravina *et al.*, 2010; Schaufeli, Bakker *et al.*, 2009). Specifically, the Very High profile was characterized by high levels of working compulsively and excessively, while the Very Low profile was

characterized by low levels of working compulsively and excessively. However, although prior studies also generally identified four profiles (Kravina *et al.*, 2010; Salanova *et al.*, 2016), two of the profiles identified here did not match prior results. Thus, the Moderately High and Moderately Low profiles were, respectively, characterized by moderately high and moderately low levels of working compulsively and excessively.

Prior variable-centred (Mazzetti *et al.*, 2016; Sandrin & Gillet, 2016) and cluster analytic (Schaufeli, Bakker *et al.*, 2009) studies generally suggested that it might be important to distinguish the two facets of workaholism. For instance, Huyghebaert *et al.* (2016) showed that working excessively, but not working compulsively, positively predicted work–family conflict and lack of psychological detachment, suggesting that it is the behavioural component of workaholism that matters in predicting impaired functioning. Still, this previous result could also simply be a reflection of the high correlation observed between these two components. Indeed, our results argue against the added value of distinguishing between the behavioural and cognitive facets of workaholism, rather suggesting that workaholism tends to be characterized by matching levels on those facets. The high correlation observed between the two subscales (.77 in Study 1, .82 in Study 2, .52 in Huyghebaert *et al.*, 2016) is also in line with this conclusion. In addition, the fact that our results were fully replicated across two independent samples of employees recruited from a diversified set of organizations and industry sectors reinforces their generalizability.

The divergent person-centred results may also reflect methodological differences, such as (1) the reliance on factor scores providing us with an improved control for measurement errors, and (2) the use of more flexible LPA which allowed us to relax the restrictive assumptions of cluster analyses. Indeed, in contrast to cluster analyses, LPA does not assume that the variance of the profile indicators is invariant across profiles. Furthermore, LPA allows all participants to have a probability of membership in all profiles based on their similarity with each prototypical latent profile. LPA also allows for the direct specification of alternative models that can be compared with fit statistics, allowing for the comparison of solutions including differing numbers of latent profiles based on a wide array of statistical indicators. Finally, because the profiles and all of the relations are estimated in a single step, the type 1 errors are limited and the biases in the estimation of the links between covariates and the latent profiles are reduced (see Meyer & Morin, 2016). Still, additional LPA research is needed to more extensively assess the generalizability of our findings.

### **Predictors of workaholism profiles**

Little research has been conducted to identify the social characteristics that contribute to the development of workaholism profiles (e.g., Caesens *et al.*, 2014), a limitation which we sought to address in the present research. Contrary to our expectations, participants' perceptions of their workplace psychosocial safety climate showed no significant association with profile membership. Study 2 also failed to identify associations between employees' levels of independence and profile membership, but showed that other job resources predicted profile membership, thus providing partial support to our hypotheses. In line with Caesens *et al.* (2014), we found that support from colleagues predicted a higher likelihood of membership into the Moderately Low relative to the Moderately High profile. In contrast, hierarchical support predicted a higher likelihood of membership into the Moderately High relative to the Moderately Low profile. These results are aligned with Ng and Sorensen's (2008), which showed that the effects of different sources of social

support may sometimes be very dissimilar. Still, it is particularly noteworthy that neither source of social support differently predicted membership into the two extreme (Very High vs. Very Low) profiles. Our results thus suggest that job resources might only minimally limit workaholism and suggest that caution is needed in the provision of hierarchical support, as this source of support tends to be associated with higher than average levels of workaholism (also see Mazzetti *et al.*, 2016). Future research needs to more extensively look at positive workplace characteristics that might curb workaholism, and try to unpack the mechanisms underlying the positive relation between hierarchical support and workaholism.

In contrast, associations between job demands and profile membership provided stronger support to our hypotheses. These results supported our assertion that higher job demands may lead employees to invest energy to meet these demands and become anxious about their ability to do so, possibly leading to excessive and compulsive work (Schaufeli *et al.*, 2008). In Study 1, participants' levels of emotional dissonance (a job demand; Zapf, 2002) provided a well-differentiated pattern of association with the profiles, being associated with a higher likelihood of membership in the Very High, Moderately High, and Moderately Low profiles relative to the Very Low profile, as well as in the Very High and Moderately High profiles relative to the Moderately Low profile. These results are aligned with our hypotheses, supporting the idea that emotional dissonance may (1) impede the ability to psychologically detach from work, thus leading to working compulsively (Sonnetag & Bayer, 2005), and (2) increase workers' feelings of workload, thus leading to working excessively (Zohar *et al.*, 2003). To the best of our knowledge, this is the first study to demonstrate a significant association between emotional dissonance and workaholism.

Similarly, results from Study 2 also supported our expectations, showing that emotional load predicted a higher likelihood of membership in the Very High and Moderately High profiles relative to the Very Low profile. However, two of the three job demands assessed in Study 2 (mental load and role ambiguity) showed no significant association with profile membership, suggesting that only some types of job demands of an emotional (emotional dissonance and emotional load) rather than cognitive (mental load, role ambiguity) nature are associated with workaholism profiles. It appears for future research to look more carefully at the predictive role of other types of job demands (e.g., uncertainty about the future). Finally, Study 2 also revealed that participants' levels of self-oriented perfectionism showed no significant association with profile membership. However, they also showed that higher levels of socially prescribed perfectionism predicted an increased likelihood of membership in the Very High profile relative to both the Moderately Low and Very Low profiles. These results are in line with past studies showing that socially prescribed perfectionism appear particularly important in fostering workaholism (Taris *et al.*, 2010). Indeed, high levels of socially prescribed perfectionism lead to a strong drive to excel out of a desire to demonstrate to others our ability to perform at work.

### **Outcomes of workaholism profiles**

Our results showed that workaholism profiles presented well-differentiated associations with the various outcomes considered here. Specifically, the Very High profile was found to be associated with higher levels of work–family conflict, emotional exhaustion, perceived stress, and turnover intentions, and lower levels of psychological detachment, job satisfaction, life satisfaction, and perceived health, followed by the Moderately High

profile, then by the Moderately Low profile, and finally by the Very Low profile. However, it is noteworthy that the Very Low and Moderately Low profiles did not differ from one another on job satisfaction and perceived health, while the Very High and Moderately High profiles did not differ from one another on life satisfaction and perceived health. Thus, these results show that the key determinant of satisfaction and perceived health seems to be the presence, or absence, of workaholism, rather than the degree of workaholism. The results are particularly interesting given that there has been a great deal of debate in the literature about the link between workaholism and these forms of satisfaction. More specifically, some researchers have conceptualized workaholics as lacking work enjoyment (Spence & Robbins, 1992), while others claim that workaholics tend to enjoy work (Ng *et al.*, 2007). Contrary to this latter view, our results showed workaholism to be negatively related to satisfaction towards work and life in general.

Our results support the idea that undesirable outcomes tend to be associated with working compulsively and excessively (van Beek *et al.*, 2011; Schaufeli, Shimazu, *et al.*, 2009), and are well aligned with prior research documenting the negative effects of workaholism on happiness, job satisfaction, and life satisfaction (Aziz & Zickar, 2006; Bakker, Demerouti, Oerlemans, & Sonnentag, 2013). When working excessively, workers devote a major amount of time and energy to their professional activities at the expense of their personal life and health. Moreover, when working compulsively, workers' obsession with work tends to be accompanied by persistent work-related ruminations. Thus, workaholics consume their resources and have insufficient opportunities to recover because they work long hours, and are unable to really rest when they finally stop working (Sonnentag & Bayer, 2005). Workaholism is thus incompatible with psychological detachment and recovery, in turn leading to negative outcomes (Huyghebaert *et al.*, 2016).

### **Correlates of workaholism profiles**

Prior research could equally be used to support expectations of need thwarting as an outcome, or a predictor, of workaholism profiles, leading to our decision to treat it as a simple correlate (Meyer & Morin, 2016). Indeed, when the needs of autonomy, competence, and relatedness are thwarted, workers are driven by an internal pressure to meet external demands, their feelings of self-worth are low and their workload may increase, possibly leading to workaholism (Schaufeli, Bakker *et al.*, 2009). Moreover, workaholics feel compelled to engage in work, have insufficient opportunities to recover from these efforts, and often fail to pay attention to others. As a result, they experience high levels of autonomy, competence, and relatedness need thwarting (Schaufeli *et al.*, 2008). Levels of need thwarting tended to be the highest in the Very High and Moderately High profiles (which differed from one another in Study 2, but not in Study 1), followed by the Moderately Low and then by the Very Low profiles, which could be differentiated from one another on their levels of autonomy, competence, and relatedness (but only in Study 2 for relatedness) need thwarting. This slight difference in results could possibly be related to the lower sample size of Study 1, which resulted in larger confidence intervals, making it harder to detect significant differences.

### **Limitations and directions for future research**

Limitations of the present research need to be acknowledged. First, we used self-report measures, and such measures can be impacted by social desirability and self-report biases.

Additional research should be conducted using objective turnover data as well as informant-reported measures of work performance. Second, we used of a cross-sectional design, which precludes interpretations regarding the directionality of the relations between predictors, correlates, outcomes, and profiles. Thus, we are unable to determine whether workaholism profiles influence employees' need satisfaction, or vice versa. Similarly, although our treatment of turnover intentions and ill/well-being as outcomes was based on theoretical considerations (Schaufeli, Bakker *et al.*, 2009), our design did not allow us to rule out the possibility of reverse causality, reciprocal influence, or spurious associations. Future longitudinal research should devote more attention to the clear identification of the true directionality of the associations among predictors, correlates, outcomes, and profiles. It would also be important for future research to better consider the mechanisms involved in both the formation and consequences of the workaholism profiles. Furthermore, additional research could adopt a longitudinal design to address the joint issues of within-person and within-sample profile stability (Kam, Morin, Meyer, & Topolnytsky, 2016). More importantly, future longitudinal research is needed to address explanations for, and limits to, profile stability while considering longer time periods and possible changes in the personal and professional lives of the employees to more carefully locate determinants of these changes. Third, we only considered self-oriented and socially prescribed perfectionism. It would be interesting for future research to also examine 'other-oriented' perfectionism (Hewitt & Flett, 1991). More generally, future research is needed to consider a more diversified set of determinants of workaholism profiles, such as perceived organizational support and career barriers (Caesens *et al.*, 2014; Spurk *et al.*, 2016). Finally, we relied on samples of French workers. Future research should examine whether the same profiles emerge in different countries and cultures.

### **Practical implications**

In practice, our results suggest that managers and practitioners should be particularly attentive to workers displaying high levels of working compulsively and excessively as these individuals appear to be at risk for a variety of work difficulties, such as emotional exhaustion, lack of psychological detachment, and turnover intentions. Organizations should also avoid situations where emotional dissonance is high to help reduce employees' workaholism. Organizations need to understand that emotional dissonance comes as a psychological cost for the organization and acknowledge employees' emotional efforts through their human resource policies and practices. Among the available methods to help reduce emotional dissonance, mindfulness techniques may prove useful (Hülshager, Alberts, Feinholdt, & Lang, 2013). Moreover, organizations may train employees on how to communicate with co-workers, supervisors, customers, and shareholders (Kenworthy, Fay, Frame, & Petree, 2014), given that appropriate communication skills tend to help to communicate emotions more appropriately, thus reducing emotional dissonance. When employees have no option but to display emotions irrespective of their felt emotions, organizations can also minimize the negative effect of emotional dissonance by fostering employees' perceptions of organizational support (Mishra & Kumar, 2016). Finally, high levels of socially prescribed perfectionism were associated with an increased likelihood of membership into the Very High profile. Thus, reducing socially prescribed perfectionism might help to reduce workaholism, in turn leading to more positive attitudinal, health, and behavioural outcomes (Childs & Stoeber, 2012). Reducing this form of perfectionism might be achieved through therapy, training, and support, although changing one's personality is difficult. Organizations may also consider regular feedback and participative goal setting,



which may help perfectionists to see that they are meeting objectives, thus limiting feelings of guilt (Hochwarter & Byrne, 2010).

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### Supporting Information

The following supporting information may be found in the online edition of the article:

**Data S1.** Preliminary Measurement Models.

**Data S2.** Selecting the Optimal Number of Profiles.