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A Longitudinal Perspective on the Associations between Work Engagement and Workaholism

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Abstract

The purpose of this two-wave longitudinal study was to examine the associations between work engagement and workaholism to better understand the psychological mechanisms underpinning high levels of work investment. These associations were examined in a sample of 514 employees using latent change models, allowing us to obtain a direct and explicit estimate of change occurring in both constructs over a 3-year period. These analyses relied on a bifactor representation of work engagement and workaholism, allowing us to properly disaggregate the global and specific levels of both constructs in the estimation of these longitudinal associations. To further enrich our theoretical understanding of the mechanisms at play in these relations, we also considered associations between these two constructs and employees' levels of harmonious and obsessive work passion, two other facets of heavy work investment. Our results revealed the longitudinal independence of employees' global levels work engagement and workaholism, showing that longitudinal associations between these two constructs occurred at the specific, rather than global, level. Harmonious work passion was only found to be associated to global and specific components of work engagement, whereas obsessive work passion was found to be associated with global and specific components of both work engagement and workaholism.

Keywords: workaholism; work engagement; work passion; longitudinal; latent change.

Hard working employees who prioritize work over other spheres of their lives have always been valued by organizations. Nowadays, evolving technologies, increases in work mobility, and changes in working conditions are prompting employees to work harder and to invest more time and energy in their work than ever before (van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012). Scientifically, heavy work investment has been studied under two distinct perspectives. A positive perspective highlights the benefits of work engagement, while a negative one highlights the risks of workaholism. Although both perspectives have received their fair share of scientific attention, little research has looked at their interrelations, particularly while adopting a longitudinal perspective. Answering calls for longitudinal research to achieve a better understanding of the mechanisms underpinning heavy work investment (Taris, Schaufeli, & Shimazu, 2010), this study relies on a latent change analyses to examine longitudinal associations between initial levels and changes over time in employees' work engagement and workaholism. In addition, to achieve a better understanding of the isolated and combined nature of these two constructs, we also consider their associations with another characteristic of highly involved employees, their levels of harmonious and obsessive passion for work.

A key contribution of the present study is its focus on new employees who have recently transitioned into the workforce following the end of their formal education. The school-to-work transition period is one of the most crucial developmental periods in young adults' lives, with widespread long-term consequences for subsequent development and adjustment (e.g., Müller & Gangl, 2003; Schoon & Silbereisen, 2009; Sortheix, Chow, & Salmela-Aro, 2015). Work engagement has been proposed as an important indicator of a successful school-to-work transition (Dietrich, Parker, & Salmela-Aro, 2012). However, we argue that both high levels of work engagement and low levels of workaholism are important indicators of a successful transition that reflects whether new employees began heavy work investment in a positive or negative manner. Importantly, the present study provides us with a unique window of opportunity to study these two forms of heavy work investment as they emerge for the first time in young adults' professional lives and early career.

High Work Investment: Work Engagement and Workaholism

Work engagement is a positive work-related state of mind characterized by vigor (i.e., high levels of energy and mental resilience), dedication (i.e., seeing work as significant, inspiring, and meaningful), and absorption (i.e., being fully concentrated and deeply immersed in one's work) (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Work engagement involves a state of high activation associated with pleasant emotions (Bakker & Oerlemans, 2011), and engaged workers are generally described as having high levels of energy, working hard, and absorbed in their work. Research has shown work engagement to be related to work-related outcomes such as to higher levels of job satisfaction (Gillet, Caesens, Morin, & Stinglhamber, 2019), job performance (Christian, Garza, & Slaughter, 2011), proactivity (Salanova & Schaufeli, 2008), and organizational commitment (Del Líbano, Llorens, Salanova, & Schaufeli, 2012), and to lower levels of turnover intentions (van Beek, Taris, Schaufeli, & Brenninkmeijer, 2014). Likewise, associations have also been reported between work engagement and individual outcomes, such as to higher levels of life satisfaction and mental health (Schaufeli, Taris, & Van Rhenen, 2008), and to lower levels of stress (Gillet, Caesens, Morin, & Stinglhamber, 2019).

Conversely, workaholism refers to an uncontrollable need or compulsion to work excessively (Oates, 1971). Workaholism is generally defined as a form of work addiction encompassing a behavioral (working excessively) and a cognitive (working compulsively) component (Schaufeli, Bakker, van der Heijden, & Prins, 2009). Workaholics spend massive amounts of time working, experience difficulties in disengaging from work, and often keep on being preoccupied with their work outside of the work context (van Beek, Taris, & Schaufeli, 2011). Workaholics are depicted as experiencing a strong and uncontrollable inner drive to work, even in the absence of matching excessive work demands (Schaufeli, Taris, & Bakker, 2006). As with other addictions, this excessive and compulsive work involvement tends to persist even when facing negative consequences (e.g., Shimazu, Schaufeli, Kamiyama, & Kawakami, 2015). Contrasting with work engagement, workaholism is described as involving a state of high activation, but unpleasant emotions (Bakker & Oerlemans, 2011), possibly due to the fact that it leaves little time for leisure and relaxation. Research has shown workaholism to be associated with detrimental work-related outcomes such as sick leaves (Matsudaira et al., 2013), work-family conflict (Bakker, Demerouti, & Burke, 2009), and emotional exhaustion (Gillet, Morin, Cougot, & Gagné, 2017). Likewise, workaholism has also been found to be associated with individual difficulties, such as poorer social relationships outside of work (Schaufeli et al., 2008), sleep problems (Kubota, Shimazu,

Kawakami, & Takahashi, 2012) and psychosomatic symptoms (Andreassen, Ursin, & Eriksen, 2007; for a meta-analysis, see Clark, Michel, Zhdanova, Pui, & Baltes, 2016).

Relations Between Work Engagement and Workaholism

Associations between work engagement and workaholism have long been a topic of scientific discussion. From a theoretical point of view, engaged workers, although working excessively, are thought to lack the compulsive drive that characterizes workaholism (Bakker, Schaufeli, Leiter, & Taris, 2008). In addition, work engagement is usually characterized by a positive affect toward working, implying that engaged workers enjoy working as opposed to workaholics who lack the same positive affect and rather experience negative emotions in relation to work, or to being unable to work (Salanova, Del Líbano, Llorens, & Schaufeli, 2014). Studies (e.g., van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012; van Beek et al., 2011) have also shown that the motivational underpinnings of work engagement and workaholism are different and might explain these opposite forms of heavy work involvement. Engaged workers are more typically driven by autonomous forms of motivation (e.g., they work because they enjoy it, find it interesting and feel that it is aligned with their own personal values and objectives) and they typically derive gratifications from performing work activities seen as rewarding in and of themselves. In contrast, workaholics are primarily driven by controlled forms of motivation (e.g., they feel an internal compulsion to work to avoid guilt or other forms of negative emotions, or they want to obtain the approval or avoid the criticism of others) because their self-worth is contingent on their ability to achieve high standards of performance at work. Engaged workers are also able to stop working without experiencing negative feelings from this decision. Workaholics, in contrast, often feel guilty when they are not working and they might even actively create additional work for themselves (van Wijhe, Peeters, & Schaufeli, 2010). In sum, engaged workers are “pulled” to their work, whereas workaholics are “pushed” to their work (Talis et al., 2010).

Despite their conceptually distinct nature and the fact that work engagement and workaholism have been shown to tap into different forms of heavy work investment (Mazzetti, Schaufeli, & Guglielmi, 2018), both constructs still remain associated with a high level of work involvement, leaving open questions regarding their possible associations. So far, most empirical studies have adopted a cross-sectional perspective when looking at associations between work engagement and workaholism and have generally shown some degree of conceptual overlap between both states. Indeed, although non-significant associations have been reported in some of those studies (e.g., De Carlo et al., 2014; Mazzetti, Biolcati, Guglielmi, Vallesi, & Schaufeli, 2016), the bulk of results rather shows positive and small-to-moderate associations between work engagement and workaholism (e.g., Bakker, Shimazu, Demerouti, Shimada, & Kawakami, 2012; Birkeland & Buch, 2015; Caesens, Stinglhamber, & Luypaert, 2014; Clark, Michel, Stevens, Howell, & Scruggs, 2014).

Whereas these previous studies have generally focused only on global measures of workaholism and work engagement, additional research has also considered how each global construct could affect the other at the specific dimension level and provided more nuanced conclusions. Regarding global workaholism and the specific components (vigor, dedication, and absorption) of work engagement, results have generally shown stronger positive associations between workaholism and the absorption dimension of work engagement, and generally much weaker or non-statistically significant relations involving vigor and dedication (Clark et al., 2016; Hakanen & Peeters, 2015). Confirmatory factor analytic evidence also supports the association between workaholism and the absorption component of workaholism (Schaufeli et al., 2008). Theoretically, this association is presumed to stem from the fact that engaged workers and workaholics both tend to display a deep immersion in their work and might find it difficult to disengage from it, even though both types of workers are driven by different motivations (Taris et al., 2010). Conversely, global work engagement has been found to share stronger positive relations with excessive (but not compulsive) working (Gorgievski, Bakker, & Schaufeli, 2010; Schaufeli, Shimazu, Hakanen, Salanova, & De Witte, 2017). Theoretically, this association might be attributed to the fact that, although both engaged workers and workaholics tend to work harder, possibly in an excessive manner, engaged workers lack the compulsion to work which may be a unique characteristic of workaholism (Taris et al., 2010).

The circumplex model of subjective wellbeing at work (Bakker & Oerlemans, 2011) characterizes various psychological states according to two distinctions reflecting the experience of pleasure or displeasure and of high or low activation. According to this model, both workaholism and work engagement represent high activation work-related states. However, workaholism (especially its

compulsive component) corresponds to a generally unpleasant psychological state, whereas work engagement (especially its vigor and dedication components) is generally assumed to reflect a pleasant psychological state. In contrast, working excessively (without the compulsion to do so) and absorption (without the vigor and dedication components of work engagement) rather seem to reflect more neutral affective states on this pleasant-unpleasant axis. Consequently, these two components (absorption and excessive working) might simply be shared characteristics of high activation work-related states. This shared nature may thus explain the associations typically reported between the unique characteristics of working excessively and global levels of work engagement, and between the unique characteristics of absorption and global levels of workaholism.

Despite the interest of these cross-sectional studies, they remain unable to provide a clear understanding of the directionality of the associations between both constructs. So far, limited longitudinal studies have either examined the temporal stability of work engagement and workaholism (e.g., Hakanen & Schaufeli, 2012), or the predictive influence of work engagement and workaholism on other variables (e.g., Shimazu, Schaufeli, Kubota, & Kawakami, 2012). To the best of our knowledge, only two longitudinal studies have examined the associations between work engagement and workaholism, both using autoregressive cross-lagged (ARCL) models (i.e., Hakanen & Peeters, 2015; Hakanen, Peeters, & Schaufeli, 2018). Interestingly, both studies came to the same conclusion, showing that global levels of work engagement and workaholism did not seem to influence one another over time. However, while ARCL is able to determine how previous states influence later states (i.e., effect of a first variable measured at Time 1 on the second variable measured at Time 2), they fail to explicitly model changes occurring over time and the influence of each construct on changes occurring in the other construct over time. Indeed, ARCL only indirectly infers changes by assessing the influence of one variable on another while controlling for the stability (i.e., autoregressions) of each construct. By comparison, latent change models provide a way to obtain a direct and explicit estimate of change occurring over time, and how early measures of each specific construct is able to predict change occurring in the other over time (Ferrer & McArdle, 2010).

Furthermore, another key limitation of all previous studies conducted in this area stems from their focus *either* on global levels of work engagement and workaholism *or* on the dimensions associated with each construct, rather than simultaneously considering both global *and* specific components. Interestingly, recent research suggests that both constructs are best represented via a bifactor operationalization allowing for a clear disaggregation of global levels of work engagement and workaholism across all dimensions from the specificities uniquely associated with each dimension and left unexplained by these global constructs (e.g., Gillet, Morin, Sandrin, & Houle, 2018; Gillet et al., 2019). In the present study, we address both of these limitations by adopting a bifactor approach to the measurement of workaholism and work engagement, and a latent change approach to the study of their longitudinal associations. Despite the novelty of our methodological approach, on the basis of the previously reviewed research evidence, we propose the following hypotheses and questions:

Hypothesis 1. Global levels of work engagement and workaholism will not to be related to changes in the other construct over time.

Hypothesis 2. Initial levels of absorption will be positively related to changes in workaholism, and initial levels of workaholism will be positively related to changes in absorption.

Hypothesis 3. Initial levels of working excessively will be positively related to changes in work engagement, and initial levels of work engagement will be positively related to changes in working excessively.

Research Question 1. We leave as an open research question whether the specific components of work engagement and workaholism would be related to changes in the specific components of the other construct over time.

Longitudinal Associations Between Work Engagement, Workaholism and Work Passion

Despite the moderately related, yet distinct nature of work engagement and workaholism, the distinction between engaged workers, workaholics, and engaged workaholics presenting both characteristics was noted by Gillet et al. (2018) to share similarities with the well-established Dualistic Model of Passion (DMP; Vallerand, 2015). Working is an important part of life and people tend to dedicate a substantial portion of their lives to it. While some employees only see their job as a source of income, other might want to find fulfillment and entertainment in it. Accordingly, they want to love it, and find it valuable and meaningful, even find it part of their identity which is the essence of passion for

work. Having passion for one's work has become an important research topic ranging from high school students to people experiencing midlife crises (Chen et al., 2015). It has also become a prominent topic of discussion in the popular (e.g., Coleman et al., 2012) and scientific (e.g., Forest et al., 2011) literature. Researchers argued that work passion is necessary for venture growth (Baum & Locke, 2004), entrepreneurial success (Cardon et al., 2009), and a range of positive outcomes (Pollack et al., 2020; Vallerand & Houliort, 2019; Vallerand, Houliort, & Forest, 2014). Interestingly, passion for work reflects yet another form of heavy work investment and, like work engagement and workaholism, not all forms of work passion are equally desirable.

The DMP differentiates between two types of passion for work, harmonious and obsessive, based on the manner in which working is internalized (Deci & Ryan, 1985). In the case of harmonious work passion, working is internalized in an autonomous and voluntary manner, without any contingencies attached. Workers with harmonious work passion feel that they can engage in working out of their own choices and interests, without depending on others' approval. In turn, harmonious passion for work typically does not conflict with other aspects of life, leading to more adaptive outcomes for harmoniously passionate workers (e.g., Curran, Hill, Appleton, Vallerand, & Standage, 2015; Vallerand & Houliort, 2019). Conversely, obsessive work passion is internalized in a more controlled manner as the values, norms and behaviors associated with working are not fully self-endorsed but imposed as intra- or interpersonal contingencies. For instance, obsessively passionate workers may engage in working to maintain a certain level of self-esteem or acceptance from a relevant social group. For this reason, individuals with obsessive work passion tend to feel pressured to work, leading to conflicts between work and other spheres of life and to a variety of maladaptive outcomes (e.g., Curran et al., 2015; Vallerand & Houliort, 2019).

As noted by Gillet et al. (2018), work engagement shares theoretical similarities with harmonious passion for work, while workaholism shares similarities with obsessive passion for work. Work engagement, like harmonious passion, is thought to be driven by autonomous forms of motivation, whereas workaholism, like obsessive passion, is thought to emerge from controlled forms of motivation (van Beek et al., 2012). As a result, engaged workers freely engage in work, but workaholics feel compelled to work, leading to a reduced sense of volition and control (Ng, Sorensen, & Feldman, 2007). Despite this important theoretical similarity, associations between work engagement, workaholism and the two forms of passion have rarely been empirically investigated. Still, the few studies on this topic have reported that work engagement is either only related to harmonious work passion (Trépanier, Fernet, Austin, Forest, & Vallerand, 2014) or more strongly related to harmonious work passion than to obsessive work passion (Birkeland & Buch, 2015). In contrast, workaholism has been shown to be only related to obsessive (but not harmonious) work passion (Birkeland & Buch, 2015). Outside the realm of work, similar findings have been reported, showing strong associations between obsessive passion and other types of addictive behaviors akin to workaholism (e.g., problematic internet use or problematic gaming), as well as weaker or non-significant associations between harmonious passion and similar problematic or addictive behaviors (e.g., Orosz, Tóth-Király, & Bóthe, 2016; Tóth-Király, Bóthe, Márki, Rigó, & Orosz, 2019). However, most previous studies have been cross sectional in nature, making it hard to assess longitudinal associations between these various constructs. In the present study, capitalizing on a large-scale longitudinal study of early career Finnish employees allows us to systematically investigate how initial levels of workaholism and work engagement, and changes over time in these constructs, related to harmonious and obsessive work passion at the end of the study. More specifically, we expect that:

Hypothesis 4. Harmonious work passion will be positively related to work engagement and changes over time in work engagement, but not to workaholism or changes in workaholism.

Hypothesis 5. Obsessive work passion will be positively related to workaholism and changes in workaholism over time, but not to work engagement or changes in work engagement.

Research Question 2. We leave as an open research question whether the specific components and the changes in these specific components of work engagement and workaholism will be related to harmonious and obsessive work passion.

The Present Study

The present study was designed to achieve five main contributions. First, via the adoption of a longitudinal design, this study seeks to achieve a more precise understanding of the directionality of the associations between global and specific components of work engagement and workaholism. Second,

this study extends previous longitudinal studies by relying on latent change approach allowing for a more precise identification of how work engagement and workaholism changes predict changes over time in the other construct. Third, the application of bifactor modeling made it possible to simultaneously identify global factors of work engagement and workaholism with co-existing specific factors of vigor, dedication, absorption, working excessively and working compulsively, thus allowing for a more comprehensive examination of the associations between these constructs. Fourth, this study extends previous studies by investigating the longitudinal associations between work engagement, workaholism, harmonious work passion and obsessive work passion. Fifth, the present study focuses on the emergence of heavy work investment as part of the school-to-early career transition period.

Method

Procedure and Participants

This study relies on data from the Cohort A of the Finnish Educational Transitions (FinEdu) project (Salmela-Aro & Nurmi, 2003-2020) and was approved by the Department of Psychology, University of Jyväskylä research ethics committee. This cohort of participants ($N = 707$ at the initial time of measurement) was recruited in 9th grade (aged 15-16), and have so far been followed across 8 waves of measurement between 2004 and 2015, with the goal of studying the post-education transition. For purposes of the present study, we focus on the 514 respondents (51.9% female) who participated in this study during one or both of the last two measurement waves and who reported being employed at that time. Of the participants, 41.8% reported having a permanent employment and 39.1% working full-time at Time 1, whereas 52.9% reported having a permanent employment and 59.3% working full time at Time 2.

Measures of work-related engagement and workaholism were only administrated at these two measurement waves, and work passion was only assessed at the last time wave. These participants were thus surveyed in 2013/2014 (Time 1: aged 24-25) and again in 2016/2017 (Time 2: aged 27-28). Research so far has been inconclusive on the amount of time it takes newcomers to adjust and fully transition into a new workplace. While the majority of the studies focus on the first year of employees transitioning to a new job (e.g., Smith et al., 2013; Tan & Shen, 2016), it has also been argued that the transition and the organizational socialization process is much longer (Harvey et al., 2010) especially for employees who know little about the role to be assumed (Van Maanen & Schein, 1979). This is the case for the current sample of participants transitioning for the first time into the workforce after having completed their education. To account for this reality, and to be able to better study this important transition process while relying on a first time point taken close to the transition and a second time point taken once we can have some degree of confidence that the early process of adaptation to this new reality has been completed, we rely on a three-year time interval (Salmela-Aro & Upadaya, 2018). This particular time lag also allowed us to maximize our ability to detect associations as Ford et al. (2014) showed that longitudinal effects tend to be small but increasing over time up to around three years.

Measures

Work engagement. At both time waves, work engagement was assessed using the 9-item Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006; Salmela-Aro & Upadaya, 2012). This instrument assesses three dimensions: Vigor (3 items; e.g., “At my work, I feel bursting with energy”; $\alpha_{T1} = .812$, $\alpha_{T2} = .864$), dedication (3 items; e.g., “I am enthusiastic about my job”; $\alpha_{T1} = .876$, $\alpha_{T2} = .900$) and absorption (3 items; e.g., “When I am working, I forget everything else around me”; $\alpha_{T1} = .773$, $\alpha_{T2} = .816$). Items were rated on a 7-point scale (1 = never, 7 = every day).

Workaholism. At both time waves, workaholism was measured with the 6-item Dutch Workaholism Scale (Schaufeli, Shimazu, & Taris, 2009; Innanen, Tolvanen, & Salmela-Aro, 2014). This instrument assesses two dimensions of workaholism: Working excessively (3 items; e.g., “I am constantly in a hurry and working against the clock”; $\alpha_{T1} = .840$, $\alpha_{T2} = .809$) and working compulsively (3 items; e.g., “I work a lot even though I do not enjoy it”; $\alpha_{T1} = .634$, $\alpha_{T2} = .640$). Items were rated on a 7-point scale (1 = never, 7 = every day).

Work passion. At the last time wave, passion towards work was measured with the Passion Scale (Vallerand et al., 2003; Salmela-Aro et al., 2016), which assesses: Harmonious passion (6 items; e.g., “My work is in harmony with the other activities in my life.”; $\alpha_{T2} = .876$) and obsessive passion (8 items; e.g., “I have the impression that my work controls me.”; $\alpha_{T2} = .915$). Items were rated on a 7-point scale (1 = not agree at all, 7 = very strongly agree).

Statistical Analyses

Measurement Models

Analyses were first conducted to verify the psychometric properties of our measures, to test their measurement invariance over time (Millsap, 2011), and to obtain longitudinally invariant factor scores for the main analyses. The decision to rely on factor scores was predicated on the complexity of the longitudinal analyses, coupled with the desire to preserve the measurement properties of the scales (i.e., bifactor, and invariance; Morin, Boudrias et al., 2016, 2017) and to maintain some degree of control for unreliability (Skrondal & Laake, 2001).

Specifications. Following previous studies (Gillet et al., 2019; Gillet et al., 2018), work engagement and workaholism were modeled using bifactor confirmatory factor analyses (CFA) (Reise, 2012). Bifactor models provide a way to directly disaggregate the total item covariance into global components underlying responses to all items and specific components that are specific to a subset of items and not explained by the global components. Workaholism was thus modelled, at each time point, as one global factor (G-factor), reflecting global levels of workaholism defined by all workaholism items, and two orthogonal specific factors (S-factors), reflecting levels of working excessively and compulsively left unexplained by the G-factor, and defined by the items associated with each of these two subscales. Likewise, work engagement was defined, at each time point, as one G-factor, reflecting global levels of work engagement defined by all items, and three orthogonal S-factors reflecting levels of vigor, dedication and absorption left unexplained by the G-factor. These two bifactor components per time point were incorporated into a single model. Following bifactor specifications (Morin, Arens, & Marsh, 2016; Reise, 2012), all S-factors were specified as orthogonal within time point, while the two G-factors were freely allowed to correlate with one another within time point (e.g., Caci, Morin, & Tran, 2015). No constraints were imposed on factor correlations over time. A priori correlated uniquenesses were added between matching indicators over time to avoid inflated stability estimates (Marsh, 2007). For comparison purposes, a longitudinal model including a simpler first-order CFA (non-bifactor) representation of workaholism and work engagement at each time point was also estimated. Longitudinal tests of invariance were conducted in sequence (Millsap, 2011): (i) configural (same model), (ii) weak (equality of loadings), (iii) strong (equality of loadings and thresholds), (iv) strict (equality of loadings, thresholds, and uniquenesses); (v) latent variance-covariance (equality of loadings, thresholds, uniquenesses, and the latent variance-covariance matrix), and (vi) latent mean (equality of loadings, thresholds, uniquenesses, the latent variance-covariance matrix, and latent means).

Passion was measured using an exploratory structural equation modeling (ESEM) representation (Morin et al., 2016) following recommendations by Marsh et al. (2013). These models were estimated using a confirmatory approach to rotation (i.e., target), allowing all factors to correlate with one another, and cross-loadings to be freely estimated but “targeted” to be as close to 0 as possible. A comparison model including a simpler first-order CFA representation of work passion was also estimated. In order to save all factor scores (estimated in standardized units with a mean of 0 and a standard deviation of 1) from a single model, this ESEM representation of work passion (measured at Time 2 only) was added the most invariant measurement model from the previous sequence.

Estimation. These preliminary analyses were conducted using Mplus 8’s (Muthén & Muthén, 2017) robust weighted least square estimator (WLSMV), which has been shown to be optimal for the ordinal nature of Likert scales following asymmetric response thresholds used in the present study (Finney & DiStefano, 2013; Morin, Myers, & Lee, 2019). Data from all participants who completed at least one measurement point (N = 514: 455 participants participated at Time 1, 431 at Time 2, and 372 at both time points) was used, and models were estimated using all available information using algorithms implemented in Mplus for WLSMV estimation (Asparohov & Muthén, 2010). This procedure is robust under the assumption that missing data can be conditioned on all latent and observed variables included in the model, which involves the constructs at the preceding time point in the present study (Enders, 2010). Among participants who responded to each time of measurement, missing data at the item level was very low (Time 1: 0% to 1.32%, M = .70%, SD = .44%; Time 2: 0% to .46%, M = .16%, SD = .17%)¹.

¹ When comparing participants on all measures as a function of the number of time points completed, no significant differences (all $ps > .08$) emerged between participants who completed one or two time points. However, attrition is less concerning under the missing at random (MAR) assumption which is robust to attrition-related differences

Model fit. Goodness-of-fit indices were used to assess the adequacy of those measurement models (Marsh, Hau, & Grayson, 2005): the chi-square test (χ^2), the comparative fit index (CFI), the Tucker-Lewis Index (TLI), and the root mean square error of approximation (RMSEA). CFA and TLI can be interpreted as good or excellent when values are higher than .90 and .95, respectively. RMSEA can be interpreted as good or excellent when values are smaller than .08 and .06, respectively. The chi-square test is also reported for the sake of transparency, but it is not considered in model evaluation as this indicator is oversensitive to high sample size and minor model misspecification (Marsh et al., 2005). In the context of measurement invariance, the focus is on the relative decreases (Δ) in the fit indices: Δ CFI of .010 or less, a Δ TLI of .010 or less, and a Δ RMSEA of .015 or less suggests that invariance has been achieved (Chen, 2007; Cheung & Rensvold, 2002). Finally, we also computed model-based composite reliability indices (McDonald, 1970; Morin et al., 2019) from the standardized factor loadings and the error variances associated with the items.

Longitudinal Latent Change Analyses

Longitudinal latent change analyses were realized to assess how changes in global levels (G-factors) of work engagement and workaholism were related to one another over time, and with work passion measured at the end of the study. To this end, a latent change model (e.g., McArdle, 2009) was estimated using Mplus 8 robust maximum likelihood estimator (MLR; Muthén & Muthén, 2017). Latent change models made it possible to disaggregate the repeated measures of participants global levels of work engagement and workaholism into their initial levels (the Time 1 scores) and a latent change factor representing decline or growth occurring between Time 1 and Time 2. Latent change models are specified by (i) regressing the Time 2 score on the Time 1 score and fixing this regression path to be exactly 1; (ii) estimating a latent change factor defined on the basis of the Time 2 score (with the factor loading fixed to be exactly 1); (iii) fixing the intercept and residual of the Time 2 score to be exactly zero in order to freely estimate the mean and variance of the latent change factor; (iv) allowing the initial level to correlate with the latent change factor. In a first series of models: (i) the initial global levels (G-factors) of work engagement and workaholism were allowed to predict changes in global levels (G-factors) of work engagement and workaholism, as well as Time 2 levels of work passion; (ii) the latent change factors associated with the work engagement and workaholism G-factors were correlated with one another at Time 2, and allowed to predict Time 2 levels of work passion. Then, in a second series of models, the specific (S-factors) levels of work engagement and workaholism at Time 1 were also incorporated to the model, used to estimate latent change scores, and allowed to predict change in the other constructs over time, and Time 2 levels of work passion. As these models are just identified, model fit cannot be assessed.

Results

Measurement Models

The goodness-of-fit results of the measurement models are reported in Table 1. These results support the adequacy of the longitudinal measurement model including bifactor-representations of work engagement and workaholism (M1), as well as its latent mean measurement invariance over time (M2 to M6). Although the comparison model (M0) including a first-order representation of both constructs achieved a comparable level of fit to the data, this model resulted in estimates of time-specific factor correlations between the various components of work engagement ($r = .941$ to $.962$ at Time 1 and $r = .949$ to $.962$ at Time 2) and workaholism ($r = .853$ at Time 1 and $r = .834$ at Time 2) that were high enough to suggest conceptual redundancies. This result thus supported the need for a measurement model able to disaggregate global and specific components of these constructs. Because of the nature of the latent change model in which the means and variances need to be freely estimated in order to be able to detect change over time, we retained the strict measurement invariant model which allowed the free estimation of these parameters while, at the same time, ascertaining stable measurement. Adding Time 2 work passion measures to the strict model also resulted in an adequate level of fit to the data, and supported the value of relying on an ESEM (M8) rather than CFA (M7) representation of work passion in terms of model fit improvement and reduction in factor correlations ($r = .646$ in CFA vs. $r = .442$ in ESEM).

Parameter estimates from this longitudinally invariant model are reported in Table 2. These results

on all key study variables and allows the probability of missingness of any variable to be conditioned on all latent and observed variables included in the model (Enders, 2010).

reveal well-defined and reliable: (a) work engagement G-factor ($\lambda = .645$ to $.914$, $M = .832$; $\omega_{t1} = .962$; $\omega_{t2} = .965$), (b) workaholism G-factor ($\lambda = .462$ to $.892$, $M = .695$; $\omega_{t1} = .892$; $\omega_{t2} = .887$), (c) harmonious passion factor ($\lambda = .696$ to $.853$, $M = .761$; $\omega_{t2} = .909$) and (d) obsessive passion factor ($\lambda = .562$ to $.996$, $M = .795$; $\omega_{t2} = .950$). In addition, the working excessively S-factor ($|\lambda| = .240$ to $.527$, $M = .409$; $\omega_{t1} = .753$; $\omega_{t2} = .780$) retained a relatively high level of specificity for an S-factor, which are typically more weakly defined than first-order factors (Morin, Myers, & Lee, 2019). In contrast, the vigor ($|\lambda| = .115$ to $.371$, $M = .253$; $\omega_{t1} = .508$; $\omega_{t2} = .466$) and working compulsively ($|\lambda| = .125$ to $.755$, $M = .414$; $\omega_{t1} = .469$; $\omega_{t2} = .483$) S-factors retained a moderate amount of specificity (according to guidelines set forth by Morin, Myers, & Lee, 2019), whereas the dedication ($|\lambda| = .101$ to $.272$, $M = .161$; $\omega_{t1} = .345$; $\omega_{t2} = .213$) and absorption ($|\lambda| = .028$ to $.398$, $M = .241$; $\omega_{t1} = .411$; $\omega_{t2} = .325$) S-factors appeared to be more weakly defined. Factors scores for the main analyses were retained from the final model of latent mean invariance. Correlations among all factor scores are reported in Table 3.

Latent Change Models

The results from the latent change models are reported in Table 4. Looking first at the model incorporating only the global factors (top section of Table 4), the results showed that global levels of work engagement and workaholism at Time 1 did not predict change in the other construct. Likewise, correlations observed between these two global constructs at Time 1 ($r = .156$, $p \leq .01$) or between changes in these two global constructs over time ($r = .095$, $p < .05$) supports the relative independence of these global constructs. In contrast, the results from the second model, in which the specific factors were also incorporated (see the middle and bottom sections of Table 4) shows that longitudinal associations between these two constructs tend to occur at the level of their specific dimensions rather than at the global level. Thus, the S-factor reflecting excessive work predicted slight increases over time in participants' global levels of work engagement. In contrast, the S-factor reflecting absorption levels predicted decreases over time in levels of workaholism. Likewise, initial global levels of workaholism predicted decreases over time in in specific levels of vigor and absorption. Finally, some associations were also found at the level of the S-factors themselves. Thus, initial specific levels of compulsive work predicted decreases over time in specific levels of dedication. Less expectedly, we also found a bidirectional negative association between vigor and compulsive work, whereby initial specific levels of these constructs predicted slight increases over time in the other.

Turning our attention to associations involving work passion at Time 2, the results from the first model including only the global factors show that Time 2 levels of obsessive work passion were positively, and similarly, predicted by participants' initial global levels of workaholism and work engagement, and by increases in these levels over time. In contrast, only participants' initial global levels of work engagement, and increases in these levels over time, predicted their Time 2 levels of harmonious work passion. In addition, the strength of the associations found between participants global levels of work engagement and harmonious passion were almost twice as large as those found between obsessive passion and participants' global levels work engagement and workaholism.

These results remained unchanged in the second model in which the specific factors were also incorporated. However, this second model also revealed some noteworthy associations involving these specific factors. Thus, initial specific levels of compulsive working, and increases over time in these specific levels, both predicted higher levels of obsessive work passion at Time 2. In contrast, increases over time in levels of excessive working predicted lower levels of harmonious and obsessive work passion at Time 2. Initial specific levels of dedication were also found to predict higher levels of harmonious and obsessive work passion at Time 2, although the former relation proved to be twice as large as the second. In addition, increases in specific levels of dedication only predicted higher levels of harmonious work passion at Time 2. Less expected was the fact that initial specific levels of vigor, and increases over time in these levels, predicted lower levels of harmonious work passion at Time 2. Finally, and similarly, the results also show that initial specific levels of absorption (going beyond one global level of work engagement), and increases over time in these specific levels, both predicted higher levels of obsessive work passion at Time 2.

Discussion

Heavy work investment represents both a highly desirable characteristic for modern organizations when it takes the form of work engagement, but also a highly problematic characteristic for employees themselves when it becomes excessive (i.e., workaholism) and harder to treat or prevent (Burke & Cooper, 2010). Unfortunately, possible inter-relations between these two theoretically distinct forms of

high levels of work investment have remained, so far, mainly undocumented, especially among new employees who, following the end of formal education, have recently transitioned into the workforce. Answering previous calls for increases in longitudinal investigations of the mechanisms underpinning heavy work investment (Taris et al., 2010), the present study was sought to examine how initial levels of work engagement and workaholism could predict changes over time in the other construct. Furthermore, in alignment with recent research evidence (e.g., Gillet et al., 2018; Gillet et al., 2019) reinforcing the important to take into account the multidimensional global and specific nature of both constructs in order to obtain a more accurate picture of their associations with other constructs, we study these longitudinal associations using a bifactor operationalization of work engagement and workaholism. Finally, following Gillet et al. (2018) suggestions of theoretical similarities between engaged workers and harmoniously passionate workers, and between workaholics and obsessively passionate workers, we also considered associations between these two constructs and employees' work passion. Interestingly, our reliance on these improved research methodologies revealed more nuanced associations between work engagement, workaholism, and work passion than what was previously suggested by previous research, and reinforced the importance of relying on a proper disaggregation of the global versus specific components of both constructs.

Work Engagement and Workaholism: Globally Distinct Constructs with Specific Similarities

Global Independence. The first objective of this study was to test the longitudinal associations between global levels of work engagement and workaholism. Our results showed that the initial levels of work engagement did not predict change over time in workaholism, just like initial levels of workaholism did not predict change over time in work engagement. In fact, even though a positive cross-sectional time-specific correlation was observed between both global constructs, these correlations remained small, adding further support to the idea that global levels of work engagement and workaholism reflect two distinct forms of work investment. These results thus support Hypothesis 1, and are in line with prior theoretical perspectives (e.g., Bakker et al., 2008), cross-sectional results (e.g., Bakker et al., 2014; Clark et al., 2014), and longitudinal results (Hakanen & Peeters, 2015; Hakanen et al., 2018) highlighting the distinctiveness of both constructs.

The Role of Specific Components in the Prediction of Global Components. The bifactor operationalization employed in this study allowed us to take into account the effects of the unique specific components of both constructs over and above the consideration of participants' global levels of effects of work engagement and workaholism. When we first consider the effects of these specific components on changes in global levels of work engagement and workaholism, our results first provided partial support for Hypothesis 3 (e.g., Gorgievski et al., 2010; Schaufeli et al., 2017). More precisely, our results revealed positive associations between initial levels excessive working and increases over time in global levels of work engagement but failed to the opposite relation between initial global levels of work engagement and increases over time in working excessively.

When interpreting the effects of specific factors extracted from a bifactor model, it is important to keep in mind that these factors have a distinct signification relative to more typical first-order factors. Thus, whereas a typical first-order factor reflects the variance shared among all items forming a specific dimension (e.g., working excessively), a specific factor in a bifactor model reflects the variance shared among these items beyond the covariance already explained by the global factor. Thus, rather than reflecting absolute levels of working excessively, this S-factors rather reflects an imbalance between excessive and compulsive work, whereas the global factor rather reflects the overall level of workaholism shared across both dimensions. Thus, the working excessively S-factor no longer reflect workaholism itself, but rather a high level of work investment (i.e., excessive) not otherwise tainted by obsession, a form of imbalance in levels of excessive working relative to one's global levels of workaholism.

What the current results suggest is that this high level of involvement may contribute to increasing employees' global levels of work engagement but that, being more highly engaged does not in itself carry a risk of generating excessive work. It is possible that excessive work, when not tainted by obsession, may reflect employees' genuine volitional desire to work hard, especially during their initial years of employment when they newcomers and want to demonstrate their value to their organization. This interpretation is supported by studies highlighting the different motivational dynamics of work engagement and workaholism, showing that work engagement is primarily driven by autonomous forms of motivation (van Beek et al., 2011, 2012). The present results suggest that the same dynamic might,

to some extent, apply to excessive working. Thus, spending a great deal of time on work-related activities (i.e., excessive working) in a way that is not tainted by the obsession to work seems to carry potential benefits in terms of engagement, which also suggests that the core risks of workaholism seem to stem from its obsessive, rather than excessive, nature, at least once the variance shared between both component is taken into account. This important result reinforces the need for interventions targeting workaholism to primarily target this obsessive component.

In contrast, our results failed to support Hypothesis 2 by revealing negative, rather than positive, relations between initial specific levels of absorption and changes over time in global levels of workaholism. Further supporting the generalizability of this negative association, initial global levels of workaholism also predicted decreases over time in specific levels of vigor and absorption. Given previous reports of positive associations between workaholism and absorption (e.g., Clark et al., 2016; Hakanen & Peeters, 2015), these results were unexpected. However, these results make more sense when considered from the perspective of the bifactor operationalization of work engagement considered in the present study. More precisely, these results show that simply displaying a high level of absorption in one's work beyond one's global level of work engagement is unlikely, in and of itself, to lead to higher global levels of workaholism. Likewise, higher global levels of workaholism seem to carry the potential to reduce the imbalance in specific levels of vigor and absorption beyond employees' global levels of work engagement. More precisely, this second result suggests that, although workaholism itself does not seem to influence work engagement, it might lead to reductions in specific levels of work absorption and vigor not otherwise explained by work engagement. This result is consistent with the conservation of resource theory (Hobfoll, 1989). Indeed, because it involves an uncontrollable compulsion-driven need to work excessively, workaholism leaves little time for relaxation and recovery, potentially depleting workers' cognitive (absorption) and behavioral (vigor) resources. Again, this might become a serious problem for newcomers wishing to be valuable to their organization by working in an excessive and compulsive manner. From this perspective, the school-to-work transition of these newcomers might not be as successful as their negative heavy work investment (i.e., workaholism) actually decreases parts of their positive heavy work investment (i.e., workaholism). This result reinforces the need for interventions targeting workaholic employees to specifically focus on their work recovery process. Clearly, additional research is needed to verify whether this result generalizes to new samples of employees and, if so, to investigate the work recovery mechanisms involved in these associations.

Specific Associations. The importance of considering both the global and specific components of work engagement and workaholism was further illustrated by the observation of additional associations located at the level of the specific component of both constructs. First, the specific levels of compulsive working predicted decreases over time in specific levels of dedication. Interestingly, prior studies not relying on a bifactor operationalization (e.g., Mäkikangas, Schaufeli, Tolvanen, & Feldt, 2013) have already reported negative associations between compulsive working and dedication. This result shows that extreme levels of compulsive working (over and above that of the global workaholism factor) might carry extra risks for employees' levels of dedication to work, hampering their successful school-to-work transition in the process. This explanation aligns well with the concept of overcommitment (Siegrist et al., 2014) which emphasizes that despite the recognized benefits of commitment and work engagement, extreme levels of commitment still seem to carry some risks for employees' functioning (Morin, Vandenberghe, Turmel, Madore, & Maiano, 2013; Shimazu, Schaufeli, Kubota, Watanabe, & Kawakami, 2018). Likewise, high performance-orientation has also been associated with detrimental outcomes such as fear of failure or exhaustion (e.g., Tuominen-Soini, Salmela-Aro, & Niemivirta, 2011, 2012).

However, specific levels of compulsive working also predicted an increase in specific levels of vigor. In other words, obsessively thinking about work could energize workers. Some studies not relying on a bifactor operationalization (e.g., Shimazu et al., 2012, 2015) have already reported small, yet positive associations between compulsive working and vigor. This result suggests that obsessive thinking about work might allow employees to better plan for their upcoming work schedule, which might help them to approach their work in a more energetic and straightforward manner. This result is thus consistent with the documented benefits of goal setting as a way to improve distinct components of work engagement (Bakker, 2017; Salmela-Aro, Tolvanen, & Nurmi, 2009; Schaufeli & Salanova, 2010). Once again, when considering this result, it is imperative to keep in mind the exact nature of the

obsessive working specific factor, which reflects this intense cognitive involvement in work planning not tainted by employee's global levels of workaholism. It is also noteworthy that the reciprocal association between initial specific levels of vigor and increases over time in specific levels of compulsive working was also significant, suggesting that energized workers seem to have more mental resources at their disposal to think about and plan for, their work. Additional research is needed to assess the replicability of these findings, document their generalizability to a greater variety of outcomes, and document the psychological mechanisms involved in these associations.

Associations with Work Passion

The second objective of the present study was to examine the associations between initial levels and changes over time in the global and specific components of work engagement and workaholism and employees' levels of harmonious and obsessive work passion. Our results first supported Hypothesis 4 and previous results (e.g., Trépanier et al., 2014) in demonstrating positive associations between initial levels of and increases over time in global levels of work engagement (but not workaholism) and levels of harmonious work passion. Engaged workers feel energetic, involved, and happily engrossed in their work without becoming obsessed about it (Bakker et al., 2008). This positive form of work involvement occurs when workers fully embrace working, enjoy their work, and engage in it in a willful manner, corresponding to the autonomous internalization of work-related activities (Hodgins & Knee, 2002). As suggested by Gillet et al. (2018), this state is very similar to harmonious work passion, an assertion that appears to be supported by our results. These results also suggest that a successful school-to-work transition (as indicated by work engagement) could lead to further positive outcomes years later in the form of harmonious work passion.

In contrast, obsessive work passion was equally predicted by initial levels of, and increases in, global levels of workaholism and work engagement, thus providing partial support for Hypothesis 5. Thus, whereas we hypothesized that obsessively passionate workers would share characteristics with workaholics but not with engaged workers, our results rather showed that obsessive work passion seemed to be underpinned by both forms of heavy work investment; that is, by a desire to work driven by autonomous reasons (e.g., working is enjoyable and satisfying), coupled with an uncontrollable urge to work driven by controlled reasons (e.g., internalized social standards of self-worth and social approval). These controlled reasons might reflect employees' self-esteem levels being contingent on performance (Lafrenière, Bélanger, Vallerand, & Sedikides, 2011) or perfectionistic tendencies (Verner-Filion & Vallerand, 2016) occurring in the context of an otherwise enjoyable work experience. This enjoyable nature would thus mean that work involvement is partly driven by the autonomous internalization of work-related activities, whereas these contingencies or perfectionistic characteristics mean that work involvement is also partly driven by the controlled internalization of these same activities (Hodgins & Knee, 2002). Thus, rather than reflecting a purely workaholic approach to work, obsessive passion rather seems to reflect a dual engaged-workaholic approach to work. This interpretation aligns with the fact that work remains a passion while also taking up a disproportionately large space in workers' life (Curran et al., 2015). These results also underscore the importance of a successful school-to-work transition by showing how displaying workaholism after transitioning could have long-term negative consequences in the form of obsessive work passion.

Finally, specific components of work engagement and workaholism also shared associations with harmonious and obsessive work passion. For instance, and matching the previous results regarding the associations between global level of workaholism and obsessive work passion, initial specific levels of compulsive working, and increases over time in these specific levels, were both found to further contribute to the prediction of higher levels of obsessive work passion at Time 2. In contrast, initial specific levels of dedication were associated with higher levels of both forms of work passion, although this association was much stronger for harmonious work passion than for obsessive work passion. Likewise, increases in specific levels of dedication were also associated with higher levels of harmonious, but not obsessive, work passion. This is consistent with the idea that involvement in an activity allows one to develop a passion for this activity, and that more positive forms of involvement (such as dedication) seem to be particularly important in nurturing a harmonious passion for that activity (Vallerand, 2015). In addition, increases, but not initial levels, in specific levels of excessive working were associated with lower levels of harmonious and obsessive work passion, suggesting that spending too much time in an activity without being fueled by at least some level of autonomous drive for this activity seems to limit one's ability to feel passionate about this activity (Vallerand, 2015).

Less expected were the associations between initial specific levels of vigor, and increases in these levels, and harmonious work passion. Similarly, initial specific levels of absorption, and increases in these levels, were found to predict obsessive work passion. These results are, however, consistent with the previously identified positive associations between vigor and compulsive work and results related to the risk of overcommitment. More precisely, these results suggest that experiencing imbalanced levels of vigor or absorption going beyond one global levels of work engagement could be harmful to employees. More precisely, workers spending high levels of energy, without being backed by equally high levels of work engagement, might be at risk for moving away from a harmonious form of work passion. Likewise, deeply engrossed workers (beyond their global levels of work engagement), might rather be drawn toward a more obsessive form of passion. These interesting results suggest that associations between various global and specific levels of heavy work involvement might be more complex than previously anticipated, suggesting the need for further research seeking to better document the cognitive, emotional, and motivational mechanisms underpinning these associations.

Limitations and Future Directions

Despite the strengths of this study (e.g., longitudinal, rigorous analyses), several limitations should be considered when interpreting our results. First, as we relied on self-reported questionnaires, it would be interesting for future research to complement the results obtained in this manner with objective data and informant-reported measures from colleagues or supervisors to better document the possible causes and consequences of heavy work investment (Mazzetti et al., 2018). Second, as demonstrated by Gillet et al. (2018, 2019), future studies would do well to rely on person-oriented strategies to obtain a different insight into the nature of work engagement and workaholism combinations (e.g., Inanen et al, 2014). A longitudinal person-oriented perspective would make it possible to test whether workers with a certain configuration of work engagement and workaholism transition into another configuration over time.

A third limitation stems from our reliance on a sample of early career Finnish workers, which makes it hard to generalize our findings to other populations. To address this issue, future studies should be conducted using more diverse and potentially representative samples from different nations, as well as from different career stages (Salmela-Aro & Upadhyaya, 2018). Fourth, future studies would benefit from considering a wider set of work-related outcomes and predictors. Importantly, additional research focusing on the role of work recovery in explaining at least some of the associations observed in the present study, and potentially incorporating physiological measures of sleep quality and stress, would be informative. Fifth, it would be interesting to examine whether the same results would be obtained using shorter (6 months, 1 year), longer (5 years, 10 years), or even much shorter (experience sampling methods with daily or weekly measurements) intervals, and multiple time points, making it possible to study the shape of, and associations between, workaholism and work engagement trajectories. Finally, the scale score reliability (α) associated with the compulsive working subscale was relatively low which may have made it harder to detect associations involving this variable. However, this limitation is mitigated by our reliance on factor scores, which provided a way to incorporate some control for unreliability in the estimation of our models.

Practical Implications

Notwithstanding these limitations, our findings suggest that organizations would do well to invest in interventions seeking to foster higher, and more balanced, levels of work engagement while also seeking to limit conditions favorable to the emergence of workaholism, particularly among newcomers recently transitioning from their education into the workforce. Several bottom-up and top-down strategies have been suggested as ways of fostering work engagement such as job crafting and strategic human resource management (Bakker, 2017), enhancing leadership (Biggs, Brough, & Barbour, 2014), or preparedness for career management (Vuori, Törnroos, Ruokolainen, & Wallin, 2019). A recent meta-analysis showed that work engagement interventions are effective (Knight, Patterson, & Dawson, 2017), providing a fruitful avenue for employers. Employers and managers should also be attentive to workers displaying high levels of workaholism, which, coupled with high levels of work engagement, could lead to obsessive work passion which has been documented to have detrimental effects (Curran et al., 2015). Research has already provided support for the efficacy of intervention strategies aimed at reducing workaholism. For instance, Van Gordon et al. (2017) showed the value of a mindfulness-based intervention at reducing workaholism. Other techniques have also been suggested, such as motivational interviewing, family counseling, or the application of cognitive-behavioral strategies (van Wijhe et al., 2010). As managers act as role models (Rich, 1997), they should lead by example and strive to display

work behaviors that encourage a healthy work-life balance and minimize an extraordinary investment of time and energy in work-related activities, thus avoiding to promote and reward workaholism. Given that both forms of passion reportedly manifested relatively high stability once developed (Schellenberg & Bailis, 2015; Tóth-Király, Bóthe, Jánvári, Rigó, & Orosz, 2019), practitioners should strive to foster work engagement and limit workaholism at the very early stages of the onboarding process so that early career workers would have a higher chance of developing harmonious, and not obsessive, passion for work.

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Table 1*Model Fit for the Preliminary Analyses*

Models	χ^2	df	CFI	TLI	RMSEA (90% CI)	$\Delta\chi^2$	Δ df	Δ CFI	Δ TLI	Δ RMSEA
M0. Configural model (CFA)	1208.367*	345	.971	.963	.070 (.066; .074)	—	—	—	—	—
M1. Configural Invariance (Bifactor-CFA)	1180.278*	309	.971	.959	.074 (.070; .079)	—	—	—	—	—
M2. Weak Invariance (loadings)	1193.255*	332	.971	.962	.071 (.067; .075)	56.136*	23	.000	+0.003	-.003
M3. Strong Invariance (thresholds)	1265.001*	400	.971	.968	.065 (.061; .069)	100.480*	68	.000	+0.006	-.006
M4. Strict Invariance (uniquenesses)	1265.001*	415	.971	.970	.063 (.059; .067)	36.379*	15	.000	+0.002	-.002
M5. Latent Variance-Covariance Invariance	1052.446*	423	.979	.978	.054 (.050; .058)	18.802*	8	+0.008	+0.008	-.009
M6. Latent Mean Invariance	1009.435*	430	.981	.980	.051 (.047; .055)	6.929	7	+0.002	+0.002	-.003
M7. Strict Invariance + Passion (CFA)	2894.168*	883	.944	.940	.067 (.064; .069)	—	—	—	—	—
M8. Strict Invariance + Passion (ESEM)	2120.548*	871	.965	.962	.053 (.050; .056)	—	—	—	—	—

Note. * $p < .01$; CFA = Confirmatory factor analysis; ESEM = Exploratory structural equation model; χ^2 = WLSMV chi-square test of model fit; df = degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; 90% CI = 90% Confidence Interval for the RMSEA; Δ = relative change in the pairwise model comparisons. Differences in the chi-square test were based on the DIFFTEST function of Mplus that is specific to the WLSMV estimator.

Table 2*Parameter Estimates from Strict Invariant Model Including Passion at Time 2*

	G-WE		S-VI		S-DE		S-AB		G-WA		S-CO		S-EX		HWP	OWP	δ	
	t1	t2	t1	t2	t1	t2	t1	t2	t1	t2	t1	t2	t1	t2			t1	t2
VI. Item 1	.822**	.851**	.296**	.274**													.237	.201
VI. Item 2	.868**	.891**	.371**	.339**													.109	.091
VI. Item 3	.820**	.850**	-.125*	-.115**													.312	.264
DE. Item 1	.864**	.891**			.142**	.101*											.233	.195
DE. Item 2	.891**	.914**			.150**	.106**											.184	.153
DE. Item 3	.812**	.853**			.272**	.197**											.267	.233
AB. Item 1	.823**	.853**					.034	.028									.321	.272
AB. Item 2	.645**	.698**					.359**	.302**									.456	.422
AB. Item 3	.792**	.839**					.398**	.327**									.214	.190
CO. Item 1									.475**	.462**	.361**	.374**					.644	.647
CO. Item 2									.583**	.571**	.125**	.130**					.645	.657
CO. Item 3									.538**	.516**	.738**	.755**					.167	.163
EX. Item 1									.860**	.839**			.491**	.527**			.018	.018
EX. Item 2									.872**	.862**			.240**	.261**			.182	.189
EX. Item 3									.892**	.873**			-.451**	-.486**			.002	.002
HWP. Item 1															.748**	.153**		.315
HWP. Item 2															.853**	.056*		.226
HWP. Item 3															.826**	.054		.275
HWP. Item 4															.730**	-.298**		.571
HWP. Item 5															.696**	.181**		.372
HWP. Item 6															.711**	.211**		.317
OWP. Item 1															.469**	.562**		.230
OWP. Item 2															.189**	.763**		.255
OWP. Item 3															.283**	.749**		.173
OWP. Item 4															.182**	.703**		.359
OWP. Item 5															-.005	.868**		.251
OWP. Item 6															-.226**	.996**		.157
OWP. Item 7															-.227**	.986**		.165
OWP. Item 8															-.189**	.734**		.548
ω	.962	.965	.508	.466	.345	.213	.411	.325	.892	.887	.469	.483	.753	.780	.909	.950		

Note. * $p < .05$; ** $p < .01$; t1-t2 = Time 1 or Time 2 (despite the strict invariance of the unstandardized parameters, the standardized parameter may still vary over time); G = Global factor from a bifactor model; S = Specific factor from a bifactor model; λ = Factor loading; δ = Item uniqueness; ω = Omega coefficient of composite reliability; WE = Work engagement; VI = Vigor; DE = Dedication; AB = Absorption; WA = Workaholism; EX = Working excessively; CO = Working compulsively; HWP = Harmonious work passion; OWP = Obsessive work passion.

Table 3*Correlations between the Variables (i.e., Factor Scores) Used in the Present Study*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. G-WE (T1)	—														
2. S-VI (T1)	0	—													
3. S-DE (T1)	0	0	—												
4. S-AB (T1)	0	0	0	—											
5. G-WA (T1)	.155**	.077	-.046	.217**	—										
6. S-CO (T1)	-.026	-.167**	.059	.126**	0	—									
7. S-EX (T1)	-.122**	.005	-.060	.044	0	0	—								
8. G-WE (T2)	.452**	.024	.026	.022	.087	-.042	-.030	—							
9. S-VI (T2)	.133*	.172**	-.171**	-.060	-.113*	-.030	-.134**	0	—						
10. S-DE (T2)	.028	-.073	.210**	.042	.099	-.073	.019	0	0	—					
11. S-AB (T2)	.030	-.081	.102*	.248**	.044	.063	-.015	0	0	0	—				
12. G-WA (T2)	.063	.041	.018	.007	.376**	.114*	.102*	.190**	-.014	-.041	.190**	—			
13. S-CO (T2)	.080	.069	-.022	-.010	.107*	.232**	.020	.057	-.053	.050	.055	0	—		
14. S-EX (T2)	-.085	-.037	-.053	-.001	.078	-.020	.200**	-.171**	.026	-.080	.002	0	0	—	
15. HWP (T2)	.383**	-.023	.148**	.000	.123*	-.022	-.006	.692**	-.123*	.293**	.094	.163**	.026	-.175**	—
16. OWP (T2)	.292**	.004	.128*	.103*	.187**	.130*	.030	.412**	-.119*	.129**	.235**	.348**	.300**	-.137**	.502**

Note. * $p < .05$; ** $p < .01$; G = Global factor estimated as part of a bifactor model; S = Specific factor estimated as part of a bifactor model; WE = Work engagement; VI = Vigor; DE = Dedication; AB = Absorption; WA = Workaholism; CO = Working compulsively; EX = Working excessively; HWP = harmonious work passion; OWP = obsessive work passion; T1 = Time 1; T2 = Time 2. All correlations were estimated from factor scores saved from the most invariant measurement model with a mean of 0 and standard deviation of 1 (correlations of 0 comes from bifactor models).

Table 4
Results from the Latent Change Analyses

	Δ WE		Δ WA		Harmonious WP		Obsessive WP			
	<i>b</i> (s.e.)	β								
Model 2a (Global Factors Only)										
G-WE (T1)			-.088 (.055)	-.087	.675 (.044)**	.648	.409 (.053)**	.392		
G-WA (T1)	-.060 (.053)	-.050			.074 (.055)	.067	.361 (.063)**	.324		
Δ WE					.600 (.042)**	.650	.277 (.047)**	.299		
Δ WA					.016 (.048)	.016	.315 (.057)**	.304		
R ²	.008		.002		.485		.260			
	Δ WE		Δ WA		Harmonious WP		Obsessive WP			
	<i>b</i> (s.e.)	β								
Model 2b (All Factors): Effects on Global Outcomes										
G-WE (T1)			-.065 (.058)	-.064	.662 (.045)**	.599	.363 (.051)**	.251		
S-VI (T1)			-.100 (.090)	-.065	-.151 (.076)*	-.099	-.050 (.102)	-.080		
S-DE (T1)			.076 (.125)	.035	.712 (.150)**	.289	.377 (.187)*	.116		
S-AB (T1)			-.310 (.079)**	-.212	-.024 (.074)	.059	.281 (.084)**	.160		
G-WA (T1)	-.100 (.065)	-.083			.089 (.059)	.054	.321 (.061)**	.329		
S-CO (T1)	-.008 (.067)	-.006			-.049 (.062)	-.066	.339 (.065)**	.263		
S-EX (T1)	.196 (.097)*	.120			-.069 (.071)	-.094	-.093 (.087)	-.144		
Δ WE					.554 (.040)**	.635	.232 (.047)**	.348		
Δ VI					-.121 (.056)*	-.095	-.098 (.077)	-.031		
Δ DE					.605 (.149)**	.317	.244 (.166)	.168		
Δ AB					.079 (.071)	-.016	.213 (.081)**	.186		
Δ WA					.056 (.049)	.080	.340 (.052)**	.288		
Δ CO					-.068 (.046)	-.038	.270 (.052)**	.267		
Δ EX					-.106 (.046)*	-.046	-.163 (.063)*	-.061		
R ²	.016		.050		.552		.382			
	Δ VI		Δ DE		Δ AB		Δ CO		Δ EX	
	<i>b</i> (s.e.)	β								
Model 2b (All Factors): Effects on Specific Outcomes										
G-WE (T1)							.078 (.055)	.076	.051 (.053)	.056
S-VI (T1)							.247 (.096)*	.158	-.096 (.085)	-.068
S-DE (T1)							-.046 (.119)	-.021	-.094 (.106)	-.047
S-AB (T1)							-.094 (.093)	-.064	-.077 (.067)	-.058
G-WA (T1)	-.118 (.051)*	-.129	.054 (.029)	.100	-.128 (.043)**	-.154				
S-CO (T1)	.118 (.052)*	.113	-.063 (.032)*	-.103	-.056 (.048)	-.059				
S-EX (T1)	-.071 (.063)	-.057	.020 (.034)	.028	-.012 (.056)	-.011				
Δ WE										
Δ VI										
Δ DE										
Δ AB										
Δ WA										
Δ CO										
Δ EX										
R ²	.036		.022		.029		.045		.006	

Note. * $p < .05$; ** $p < .01$; *b* = Unstandardized regression coefficient; s.e. = Standard error of the coefficient; β = Standardized regression coefficient; G = Global factor estimated as part of a bifactor model; S = Specific factor estimated as part of a bifactor model; T1 = Initial level at Time 1; Δ = latent change between Time 1 and Time 2; WE = Work engagement; WA = Workaholism; WP = work passion; VI = Vigor; DE = Dedication; AB = Absorption; CO = Working compulsively.; EX = Working excessively; R² = proportion of explained variance.