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Engaged managers are not workaholics: Evidence from a longitudinal person-centered analysis

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ABSTRACT

The aims of this two-year follow-up study among Finnish managers (n = 463) were twofold: first, to investigate the relation between work engagement and workaholism by utilizing both variable- and person-centered approaches and second, to explore whether and how experiences of work engagement and workaholism relate to job change during the study period. The variable-centered analysis based on Structural Equation Modelling revealed that the latent factors of work engagement and workaholism did not correlate with each other, thereby suggesting that they are independent constructs. The person-centered inspection with Growth Mixture Modelling indicated four work engagement-workaholism classes: 1) "high decreasing WE - low stable WH" (18%), 2) "low increasing WE - average decreasing WH" (7%), 3) "low decreasing WE - low stable WH" (6%), and 4) "high stable WE - average stable WH" (68%). Overall, these results suggest first that also at the intra-individual level work engagement and workaholism were largely independent psychological states (changes in work engagement and workaholism were related only in the class "low increasing WE - average decreasing WH", 7%); second, job conditions had an impact on the levels of both work engagement and workaholism as, typically, the participants in the class "low increasing WE - average decreasing WH" had typically changed their job during the study period. The fact that work engagement and workaholism are sensitive to job changes suggests that both psychological conditions depend – at least partly – on the individual's work situation.

Los directivos vinculados psicológicamente en el trabajo no son adictos al mismo: datos de un análisis longitudinal centrado en la persona

Palabras clave:
Engagement
Adicción al trabajo
Cambio de trabajo
Enfoque centrado en la persona

RESUMEN

El objetivo de este estudio longitudinal entre directivos finlandeses (n = 463) fue doble: en primer lugar investigar la relación entre el engagement (E) y la adicción al trabajo (AT) mediante enfoques centrados en la persona y en la variable y, en segundo lugar, explorar si (y cómo) se relacionan las experiencias de engagement y la adicción al trabajo con el cambio de trabajo durante el período de estudio. El análisis centrado en las variables, basado en modelos de ecuaciones estructurales, mostró que los factores latentes del engagement y la adicción al mismo no correlacionan entre sí, lo que sugiere que son constructos independientes. Los análisis centrados en la persona indicaron cuatro perfiles de engagement-adicción al trabajo: 1) "gran disminución de E - baja estabilidad de AT" (18%), 2) "poco aumento de E - disminución moderada de AT" (7%), 3) "poca disminución de E - poca estabilidad de AT" (6%) y 4) "gran estabilidad de E - moderada estabilidad de AT" (68%). En conjunto, estos resultados sugieren en primer lugar que también a nivel intra-individual el engagement y la adicción al trabajo son estados psicológicos independientes: los cambios en el engagement y la adicción al trabajo se referían únicamente al perfil "poco aumento de E - disminución moderada de AT" (7%). En segundo lugar, las condiciones de trabajo influyeron en los niveles tanto de engagement como de adicción al trabajo ya que, por lo general, los participantes del perfil "poco aumento de E

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- disminución moderada de AT" habían cambiado de trabajo durante el período de estudio. El hecho de que el engagement y la adicción al mismo sean sensibles a los cambios de trabajo sugiere que ambas condiciones psicológicas dependen –al menos parcialmente– de la situación laboral de la persona.

Following the emergence of positive psychology (Aspinwall & Staudinger, 2002; Seligman & Csikszentmihalyi, 2000), increasing interest has been shown in positive aspects of health and well-being. In the field of occupational health psychology, this has meant a sharp rise in studies of positive organizational behavior (Bakker & Schaufeli, 2008). *Work engagement* (Schaufeli, Salanova, González-Romá, & Bakker, 2002) has received special attention, not least because engaged employees show higher job and organizational performance, positive job attitudes, higher psychological well-being, and proactive job behavior (Bakker & Demerouti, 2007; Bakker & Schaufeli, 2008).

After the almost exclusive focus on positive states in the early years, current research in positive psychology has sought to restore the balance and now strives towards understanding the entire range of well-being, and not solely its positive side (Gable & Haidt, 2005; Linley, Joseph, Harrington, & Wood, 2006; see also Mäkikangas, Hyvönen, Leskinen, Kinnunen, & Feldt, 2011). Following this lead, the aim of the present study was to provide an integrative and comprehensive perspective on occupational well-being through investigating both work engagement and workaholism, and its simultaneous longitudinal development over a two-year period, among Finnish managers.

We focus on managers because they have reported high levels both of work engagement (Hyvönen, Feldt, Salmela-Aro, Kinnunen, & Mäkikangas, 2009; Mäkikangas, Feldt, Kinnunen, & Tolvanen, 2012) and workaholism (Taris, van Beek, & Schaufeli, 2012). A unique feature of the present study is to investigate long-term intra-individual trajectories of work engagement and workaholism and how these are related to job change in managers. By using a person-centered approach (Bergman, Magnusson, & El-Khouri, 2003; Laursen & Hoff, 2006) we are able – for the first time – to study the individual constellations of work engagement and workaholism using longitudinal data and taking into account their mutual developmental dynamics on the intra-individual level. An improved understanding of the constellations of well-being indicators within individuals would help researchers and managers to better describe and understand the multifaceted nature of occupational well-being. Furthermore, by analyzing the impact of job change, we are able to investigate whether work engagement and workaholism are context-specific or trait-like in nature. In conclusion, our study offers new theoretical insights into the essence of two forms of heavy work investment, work engagement and workaholism.

Work engagement and workaholism: Definitions and internal validity

Employee engagement has been approached from several theoretical perspectives. However, the most cited definition of engagement is that of Schaufeli et al. (2002). According to them, work engagement is a positive, fulfilling and rather consistent state of mind characterized by vigor, dedication, and absorption. Vigor refers to high levels of mental energy and resiliency while working, and personal investment at work; dedication refers to feelings of pride, meaningfulness, challenge, and enthusiasm about one's work; and, absorption refers to being fully immersed in one's work and losing all sense of time while working. The Utrecht Work Engagement Scale (UWES, Schaufeli et al., 2002) was developed to measure these three dimensions of engagement. The present study utilized the definition of work engagement provided by Schaufeli et al. (2002) and used the UWES to measure employee engagement (see also Christian, Garza, & Slaughter, 2011).

Workaholism, in turn, is approached via the definition of Schaufeli and his colleagues (Schaufeli, Shimazu, & Taris, 2009; Schaufeli, Taris, & van Rhenen, 2008). They define workaholism as the tendency to work excessively hard (the behavioral component) and being obsessed with work (the cognitive component), which manifests itself in working compulsively. This definition is in line with the recent literature, which shows that hard work at the expense of other important life roles (e.g., family, friends, off-job activities) and a strong internal drive to work are the core aspects of workaholism (for a review, see McMillan & O'Driscoll, 2006; Ng, Sorensen, & Feldman, 2007). Moreover, this definition agrees with the original notion of workaholism, described by Oates (1971, p. 11) as "the compulsion or the incontrollable need to work incessantly". The two-dimensional conceptualization of workaholism as the combination of working excessively and compulsively is embodied in the Dutch Workaholism Scale (DUWAS, Schaufeli, Shimazu et al., 2009; Schaufeli, Taris, & van Rhenen, 2008) that is used in the present study.

The concepts of work engagement and workaholism share similarities as both are characterized by a heavy investment in work that is driven either by a strong sense of involvement and identification with the job (work engagement) or a strong inner urge to work very hard (workaholism) (Schaufeli, Taris, & Bakker, 2006). The relationship between work engagement and workaholism can be depicted by using a circumplex model (Russell, 1980), which has been recently applied in the work context (Bakker & Oerlemans, 2011). This theoretical framework assumes that different types of employee well-being are constituted by combinations of two underlying orthogonal dimensions that run from pleasure to displeasure and from activation to de-activation, respectively. By combining these two dimensions, four quadrants emerge. According to Bakker and Oerlemans (2011), these four quadrants correspond to different kinds of occupational well-being. That is, work engagement is characterized by high activation and pleasure, whereas workaholism is similarly characterized by high activation, but also by displeasure. To complete the four quadrants, burnout, as the opposite pole of work engagement, is characterized by low activation and displeasure, while job satisfaction is characterized by low activation and pleasure. Recently, Salanova, Del Libano, Llorens, and Schaufeli (2013) have confirmed the validity of this four-fold circumflex model of employee well-being. Using cluster analyses, they found that engaged and workaholic employees experienced the highest levels of energy, whereas engaged workers reported the most pleasure, and workaholics (together with burned-out employees) the least pleasure, in their jobs. Thus, in the theoretical sense, it could be argued that work engagement represents a "good" way of working hard, whilst in contrast workaholism represents a "bad" way of working hard (see also Schaufeli, Taris et al., 2006; Schaufeli, Taris, & van Rhenen, 2008). External validity research has supported this argument by showing that engaged employees differ in their work motivation and work mood as well as in several work-related and general well-being outcomes when compared with workaholics (e.g., Shimazu, Schaufeli, Kubota & Kawakami, 2012; Taris et al., 2012; van Beek, Taris, & Schaufeli, 2011; van Wijhe, Peeters, Schaufeli, & van den Hout, 2011).

The focus of the present study is on the internal (discriminant) validity of work engagement and workaholism. Previous internal validity research has typically investigated the strength of the correlation between work engagement and workaholism scores, thus relying on a variable-centered approach. Earlier studies have not found a strong association between work engagement and

workaholism: typically, correlation coefficients have been close to zero (r = -.05–.01) (Schaufeli, Shimazu et al., 2009; Schaufeli, Taris, & van Rhenen, 2008; van Wijhe et al., 2011) or very weak (r = -.07–.19) (Schaufeli, Shimazu et al., 2009; van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012; van Beek et al., 2011). Based on the propositions of the circumplex model (Bakker & Oerlemans, 2011) and on empirical results, we predicted that work engagement and workaholism are not inter-correlated (*Hypothesis 1*).

A variable-centered investigation that is based on correlations *between* individuals does not reveal the nature of the relation between work engagement and workaholism *within* individuals. The present study also utilizes a person-oriented approach to investigate the relations between work engagement and workaholism. By using this approach, we were able to identify different groups of employees with different scoring patterns of engagement and workaholism across time, such as groups with increasing, decreasing or stable levels of engagement and/or workaholism.

Thus far, very few person-centered studies have focused on either work engagement or workaholism, and these constructs have been investigated simultaneously in only three previous studies. In the first of these, Spence and Robbins (1992) used a cluster analytical approach to identify groups based on work involvement, enjoyment, and drive, which they measured with WorkBat, an instrument designed to assess participants' broad definition of workaholism. They found six different profiles: enthusiastic workaholics, unengaged workers, relaxed workers, workaholics, work enthusiasts, and disenchanted workers. Their group of "work enthusiasts", scoring high on involvement and enjoyment and low on drive, closely resembles what we would term engaged employees (cf. Schaufeli, Taris, & Bakker, 2008). Two other studies have sought to identify work engagement-workaholism groups using UWES and DUWAS, i.e., the same scales used in the present study. Van Beek et al. (2011) formed four similar-sized profiles based on mean split criteria: workaholics, engaged workers, engaged workaholics, and non-workaholic/non-engaged workers. In the study by Mäkikangas et al. (2013) four different latent groups were identified based on scores for work engagement, workaholism, burnout, and job satisfaction; however, the level of workaholism was similar across the groups.

As noted above, no studies have simultaneously probed the development of work engagement and workaholism over time, as it is done in the present study. The advantage of a longitudinal person-centered approach (see Laursen & Hoff, 2006) is that it captures the heterogeneity in work engagement and workaholism by identifying subgroups of employees who follow a similar mean-level stability or change pattern over time, i.e., in this study over a two-year time lag. By adopting a longitudinal person-centered approach, our study contributes to a better understanding of the long-term development of work engagement and workaholism as well as their longitudinal mutual associations at the individual level. Our design also allows identification of atypical developmental paths and their associations across time that might be masked by a variable-centered approach (i.e., studies relying on correlation, regression, and SEM techniques).

Longitudinal investigations of work engagement and, in particular, workaholism are relatively scarce. Variable-oriented findings based on rank-order stabilities suggest that while work engagement is relatively stable over time (Hakanen & Schaufeli, 2012; Hakanen, Schaufeli, & Ahola, 2008; Schaufeli, Bakker, & van Rhenen, 2009), at the individual level changes in absolute stability (i.e., mean-level changes) are highly typical (Mäkikangas et al., 2012). To date, such evidence is not available for workaholism, although it has been suggested that workaholism might be more stable than work engagement (Gorgievski & Bakker, 2010). Hence, the second objective of the present study is exploratory in nature, as no detailed hypotheses on the number, level, or direction of the work engagement-workaholism classes were set. However, we expected that different long-term classes based on the managers' work engagement and workaholism scores would be identified (*Hypothesis 2*).

To further investigate individual changes in work engagement and workaholism across time, we assessed whether or not managers changed their job during the study period. This knowledge would allow us to evaluate the extent to which engagement and workaholism are trait-like, i.e., remain unchanged in response to job change or, alternatively, are sensitive to job change, and thus depend on the job situation. Earlier evidence on the impact of job change suggest that it is beneficial in terms of increased levels of job satisfaction (Boswell, Shipp, Payne, & Gulbertson, 2009) and decreased levels of burnout (Dunford, Shipp, Boss, Angermeier, & Boss, 2012). Because work engagement is positively associated with job satisfaction (Christian et al., 2011) and conceptualized as the opposite of burnout (González-Romá, Schaufeli, Bakker, & Lloret, 2006), we expected job change to result in increased work engagement levels (*Hypothesis 3*). Based on the finding that workaholism is negatively related to job satisfaction (Salanova et al., 2013) and positively to burnout (van Beek et al., 2012), we expected that job change would result in decreased workaholism levels (*Hypothesis 4*).

Method

Data collection

Technical and commercial managers (total N = 3,000) were randomly selected from the membership registers of two Finnish national labor unions: the Finnish Association of Business School Graduates (N = 1,500) and the Finnish Association of Graduate Engineers (N = 1,500). The sample can be considered as representative of the target group, since the majority of employees (67.4%) belong to an industry-based labor union in Finland (Ahtiainen, 2011). Questionnaires with a covering letter and a pre-paid envelope were sent to the subjects' home addresses in 2009. Those who did not respond after the initial contact were sent a reminder letter. Recipients who did not meet the inclusion criteria (i.e., were unemployed or retired, or did not work in management) were asked to return the form with an annotation to indicate their current employment situation. These respondents (n = 369) were omitted from the sample. Altogether, 902 completed questionnaires were returned, yielding a response rate of 34%. Attrition analysis showed that respondents slightly differed from non-respondents by gender, $\chi^2(1) = 6.07$, $p < .05$, and age, $t(1751) = 2.69$, $p < .01$: the proportion of women among the respondents was slightly higher and respondents were, on average, one year younger than non-respondents.

Follow-up data were collected two years later, in 2011. A two-year time lag was considered to be long enough to investigate the direction of occupational well-being development among the present managers (see also Mäkikangas et al., 2012). At follow-up, 174 participants indicated that they no longer wished to participate in the study. In addition, one participant had died after the first data collection, leaving 727 potential participants. A total of 491 managers returned the follow-up questionnaire (68%). Of these respondents, 26 had either retired after the first measurement (n = 15) or lost their job (n = 11). In addition, three respondents were not working (e.g., studying, sick leave).

Participants

The present participants included all 463 managers who responded to the study and completed the work engagement and workaholism scales at both measurement times, and who were employed on both occasions. On average, the participants were 46 years old (range 25-68 years, SD = 9.15 years) at the baseline measurement. Forty-seven percent of them worked in top management and 53% in middle management. They worked on

average 46 hours per week (*SD* = 7.08 hours) at baseline. The managers were employed in a wide range of industries: manufacturing (40.3%), information processing (14.8%), real estate and rentals (12.2%), service and trade (7.2%), financing and insurance (7.1%), public administration (7.2%), education (2.2%), and other (9.0%, e.g., health care, public relations, and public transport). The educational level of the sample was high, 90% having an academic degree. Twenty-one percent (n = 96) of the managers changed their job during the study period.

Measures

Work engagement was assessed with the 9-item Finnish version (Seppälä et al., 2009) of the Utrecht Work Engagement Scale (UWES-9, Schaufeli, Bakker, & Salanova, 2006; see also Schaufeli et al., 2002). The short version of the UWES was selected because it has been shown to have better validity than the original 17-item scale, especially in longitudinal study designs (see Seppälä et al., 2009). The UWES-9 consists of three subscales that reflect the underlying dimensions of engagement: Vigor (three items, e.g., "At my job I feel strong and vigorous"), Dedication (three items, e.g., "My job inspires me"), and Absorption (three items, e.g., "When I am working, I forget everything else around me"). The items were rated on a 7-point frequency-based scale ranging from 1 (never) to 7 (daily). Cronbach α's were as follows: vigor, .89 at Time 1 and .88 at Time 2; dedication, .89 at Time 1 and .91 at Time 2; and absorption, .87 at both measurements.

Workaholism was measured with the 10-item Dutch Work Addiction Scale (DUWAS, Schaufeli, Shimazu et al., 2009). The scale consists of two subscales: Working Excessively (five items, e.g., "I seem to be in a hurry and racing against the clock") and Working Compulsively (five items, e.g., "I feel that there's something inside me that drives me to work hard"). The items were rated on a 4-point frequency-based scale ranging from 1 (never) to 4 (always). Cronbach α's were as follows: working excessively .74 at Time 1 and .68 at Time 2, and working compulsively .79 at Time 1 and .74 at Time 2.

Job change. At Time 2, 96 participants reported that they had changed their job since Time 1. The job change variable was treated as dichotomous in our analyses (1 = stayers, 2 = movers).

The means, standard deviations and correlations of the work engagement and workaholism dimensions are presented in Table 1.

Sample attrition

Attrition analyses for the longitudinal data showed that those who dropped out from Time 1 to Time 2 did not differ significantly from those who participated at both Times 1 and 2 in the main study variables: work engagement, $t(887) = 1.36$, $p = .17$ and workaholism, $t(880) = 1.87$, $p = .06$. In addition, no significant differences were found between respondents and non-respondents in background characteristics: gender, $\chi^2(1) = 1.87$, $p = .17$; age, $t(900) = .94$, $p = .35$; education, $\chi^2(2) = 0.39$, $p = .82$; management level, $\chi^2(1) = 0.51$, $p = .47$; working hours, $t(805) = 0.60$, $p = .55$. Hence it can be concluded that no selective dropout occurred.

Analysis strategy

Phase 1: Establishing the construct validity of work engagement and workaholism. Confirmatory factor analysis (CFA) was used to test the hypothesized factor models for work engagement (the correlated three-factor model) and for workaholism (the correlated two-factor model). The latent factors of both constructs were based on the observed items. Next, the stability models for work engagement and workaholism were estimated by using Structural Equation Modeling (SEM). This was done by merging the best-fitting measurement models from Time 1 and Time 2. Stability models were constructed by adding structural equations between the corresponding latent factors from Time 1 and Time 2. The measurement models that were estimated at the two time points were merged by using structural equations between the factors. Next, the invariance of the factor loadings across time was tested by constraining the corresponding factor loadings to be equal. This was done to ensure that the scales were interpreted in the same way at the two time points. The equality assumption is supported if the Satorra-Bentler scaled difference chi-square test (Satorra & Bentler, 2001) produces a non-significant loss of fit for the constrained stability model as compared to the unconstrained model.

Phase 2: Investigating the associations between work engagement and workaholism. The CFA models for work engagement and workaholism were estimated using the same model in order to investigate the associations between the latent factors. These associative models were evaluated separately for both time points.

Both the phase 1 and 2 analyses were performed with the Mplus statistical package (Version 6, Muthén & Muthén, 1998-2010), using the missing data method (Muthén & Muthén, 1998-2010) and estimating the model parameters using the maximum likelihood estimation with robust standard errors (MLR estimator, Muthén & Muthén, 1998-2010). The goodness-of-fit of the tested models was evaluated by using the χ^2 value (Bollen, 1989). In addition, a variety of other model fit indices were used. These were the Root Mean Square Error of Approximation (RMSEA, Steiger, 1990), for which values of .05 or less indicate a good fit, values of .06–.08 an adequate fit, and values close to .10 a mediocre fit (Schermelleh-Engel, Moosbrugger, & Müller, 2003), and the Comparative Fit Index (CFI,

Table 1
Means (*M*), standard deviations (*SD*), Cronbach's alphas (in parentheses), and correlations among the study variables (N = 463)

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	
1. Vigor T1	5.75	1.05	(.89)									
2. Dedication T1	5.91	1.10	.78	(.89)								
3. Absorption T1	5.83	1.06	.58	.71	(.87)							
4. Working exessively T1	2.69	0.62	-.08	.00	.15	(.74)						
5. Working compulsively T1	2.07	0.55	-.15	-.08	.14	.57	(.79)					
6. Vigor T2	5.75	1.09	.57	.49	.45	-.03	-.07	(.88)				
7. Dedication T2	5.86	1.15	.44	.49	.44	.03	-.03	.81	(.91)			
8. Absorption T2	5.81	1.08	.44	.48	.66	.16	.13	.67	.70	(.87)		
9. Working exessively T2	2.58	0.64	.01	.08	.17	.59	.41	-.05	.02	.21	(.68)	
10. Working compulsively T2	2.11	0.56	-.09	-.02	.07	.40	.59	-.19	-.15	.05	.57	(.74)

Note. If $r = |.11\text{-}.13|$, $p < .05$; $r = |.14\text{-}.17|$, $p < .01$; $r \geq |.18|$, $p < .001$

Bentler, 1990) and Tucker-Lewis index (TLI, Tucker & Lewis, 1973), for both of which values above .90 indicate an acceptable fit (Hu & Bentler, 1999).

Phase 3: Identifying the work engagement-workaholism classes. Growth Mixture Modeling (GMM) performed with the Mplus statistical package (Version 6, Muthén & Muthén, 1998-2010) was used to identify classes of work engagement and workaholism across the two-year follow-up period. Modeling was based on the idea that the observed data may represent latent classes, and that these classes can be identified and their parameters estimated (Muthén, 2001). More specifically, GMM treats longitudinal data by nesting the time observations within individuals and it identifies unobserved classes by nesting the individuals within latent classes (Wang & Bodner, 2007). The parameters of the models were estimated using the maximum likelihood estimation with robust standard errors (MLR estimator, Muthén & Muthén, 1998-2010).

The analyses were based on growth curve models of work engagement and workaholism that consisted of a latent intercept component and a latent slope component (see Duncan, Duncan, Strycker, Li, & Alpert, 1999). Because the intercept is constant for any given individual across time, the factor loadings of the observed composite variables were set at 1 for both measurement points (see Duncan et al., 1999). The slope component describes individual differences in the constant rate of mean-level change across the measurement points. Consequently, the loadings for the slope components were fixed in an ascending order (in this case, 0 and 1 for Time 1 and Time 2, respectively; see Duncan et al., 1999). The analyses of the latent classes were based on differences in the means of the intercept and slope components of work engagement and workaholism.

Various criteria were used for determining the adequate number of latent classes (Muthén, 2003): (a) the Akaike Information Criterion (AIC); (b) the Bayesian Information Criterion (BIC); (c) classification quality as determined by entropy values (entropy values range from 0 to 1, where values close to 1 indicate clear classification; (d) over 2% of the managers in a trajectory in order to avoid overextraction of the latent classes; and (e) the usefulness, meaningfulness and clarity of the latent classes.

Phase 4: Characterization of the work engagement-workaholism classes. The relationship between the sociobiographics (i.e., gender, age, education, management level, weekly working hours), job change, and the identified work engagement-workaholism groups was investigated with the χ^2 and F tests. In the χ^2 test, adjusted residuals above +/-2 are considered to indicate statistically significant dependency.

Results

Phase 1: The factorial validity of work engagement and workaholism

Work engagement. The three-factor measurement model for work engagement, consisting of the latent vigor, dedication, and absorption factors, produced a good fit with the data at both measurement times after estimating three pairs of error covariances within the same dimension: $\chi^2(21) = 62.54$, $p < .001$, CFI = .98, TLI = .97, RMSEA = .07 at Time 1 and $\chi^2(21) = 89.15$, $p < .001$, CFI = .97, TLI = .94, RMSEA = .08 at Time 2. The goodness-of-fit indices without these additional estimations were: $\chi^2(24) = 265.22$, $p < .001$, CFI = .89, TLI = .84, RMSEA = .15 at Time 1 and $\chi^2(24) = 290.74$, $p < .001$, CFI = .87, TLI = .80, RMSEA = .16 at Time 2. The improvement of the model with the estimated error covariances compared to the model without these was statistically significant, $\Delta\chi^2(3) = 258.60$, $p < .001$ at Time 1 and $\Delta\chi^2(3) = 2296.79$, $p < .001$ at Time 2. The standardized factor loadings for vigor varied from .79 to .83, for dedication from .76 to .91, and for absorption from .64 to .89. The associations between the latent work engagement factors varied between .83 and .97.

The stability model of work engagement was tested next by combining the CFA models measured at both time points using the structural equations between the latent factors. The freely estimated stability model fitted well with the data: $\chi^2(114) = 378.29$, $p < .001$, CFI = .95, TLI = .93, RMSEA = .07. Next, the factor loadings were constrained to be equal across time. The goodness-of-fit indices for this model were: $\chi^2(120) = 388.49$, $p < .001$, CFI = .95, TLI = .93, RMSEA = .07. The results of the χ^2 difference test showed that the loss of fit was not statistically significant, $\Delta\chi^2(6) = 7.936$, $p = .24$, thus lending support to the invariance of the factor loadings over time. The standardized stability coefficients for the work engagement factors varied between .57 and .80.

Workaholism. The two-factor measurement model for workaholism, consisting of the latent factors working excessively and working compulsively, produced a good fit to the data at both measurement times after estimating three pairs of error covariances: $\chi^2(31) = 108.85$, $p < .001$, CFI = .94, TLI = .92, RMSEA = .07 at Time 1 and $\chi^2(31) = 127.36$, $p < .001$, CFI = .93, TLI = .90, RMSEA = .08 at Time 2. The constrained model (i.e., the model with the error covariances estimated) fitted significantly better to the data than its predecessor at both time points: $\Delta\chi^2(3) = 57.07$, $p < .001$ at Time 1 and $\Delta\chi^2(3) = 58.28$, $p < .001$ at Time 2. The standardized factor loadings for working excessively varied from .54 to .74 and for working compulsively from .49 to .76. The latent factors correlated with each other, the correlations varying between .75 and .77.

The stability model for workaholism with all 10 auto-covariances estimated across time showed a good fit with the data: $\chi^2(148) = 359.12$, $p < .001$, CFI = .94, TLI = .92, RMSEA = .05. The estimation of the auto-covariances significantly improved the model fit: $\Delta\chi^2(10) = 502.33$, $p < .001$. The invariance testing for workaholism showed that the constrained model (i.e., the factor loadings equal across time), $\chi^2(156) = 368.71$, $p < .001$, CFI = .94, TLI = .93, RMSEA = .05, produced a non-significant loss of fit $\Delta\chi^2(8) = 8.41$, $p = .39$, thus lending support to the invariance of the factor loadings over time. The standardized stability coefficients for the workaholism factors varied between .65 and .66.

To summarize, both work engagement and workaholism showed good factorial validity and the same latent dimensions were assessed in both measurements, thus showing factor equivalence over time. This means that a necessary prerequisite for longitudinal data analysis has been met, and hence we can continue with our analyses.

Phase 2: Association between the latent factors of work engagement and workaholism

The previously tested factor models of work engagement and workaholism were combined and integrated into a common model in order to evaluate their mutual associations. For this purpose, second-order factor models were constructed for both constructs, i.e., these models are identical to the above-tested correlated three- and two-factor models for work engagement and workaholism, respectively. The resulting composite model that comprised two correlated second-order factor models fitted the data well at both time points: $\chi^2(141) = 393.68$, $p < .001$, CFI = .94, TLI = .93, RMSEA = .06 at Time 1 and $\chi^2(141) = 495.75$, $p < .001$, CFI = .92, TLI = .90, RMSEA = .07 at Time 2. The modification indices indicate that there were no cross loadings between the studied constructs. The results of this combined model revealed that the latent factors of work engagement and workaholism showed no significant inter-correlation: the correlation was -.07 (SE = 0.06), $p = .31$ at Time 1 and -.08 (SE = 0.10), $p = .42$ at Time 2. Therefore our first hypothesis was supported.

Phase 3: Work engagement-workaholism classes

Table 2 reports the tested latent class solutions for work engagement and workaholism, when included simultaneously in the

Table 2
Fit indices for growth mixture models of work engagement-workaholism relation with different numbers of latent classes (n = 463)

No. of classes	Log L	No. of free parameters	AIC	BIC	Entropy	Latent class proportions (%)
1	-4618.78	33	9303.56	9440.11	-	100
2	-4479.59	44	9047.15	9229.24	.89	17/83
3	-4427.16	55	8964.31	9191.89	.91	14/80/6
4	-4373.85	66	8879.69	9152.79	.92	18/7/6/68
5	-4320.83	77	8795.65	9114.26	.91	8/5/4/13/70
6	-4280.75	88	8737.51	9101.63	.82	2/6/10/7/34/41
7	-4246.80	99	8691.61	9101.24	.83	3/7/42/5/8/33/2

Note. AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion.

GMM analysis. The BIC value, which has proven to be the most consistent goodness-of-fit indicator of latent classes (Muthén, 2006), supported a six-class solution. However, this solution had low entropy value and, in addition, included a minor class containing only 2% of the managers. Thus, the six-class solution was dismissed. Since the four-class solution possessed the highest entropy value and also offered the most meaningful interpretation, it was chosen as the final model. Moreover, the difference between the five- and four-class solutions was negligible, as in the five-class solution one class divided into two classes both of which retained the same profile, with only a slight difference in their mean levels of work engagement.

Figure 1a-b shows the results for the selected four-class solution in more detail. To assess statistically significant differences between the classes, post hoc ANOVAs were performed and results are presented in the note below Figure 1a-b. The four-class solution revealed that the largest class (i.e., class 4) contained 68% of the managers (n = 316). The profile of these respondents showed high stable levels of work engagement and average stable levels of workaholism (see Figure 1a-b). This class had the highest values for both work engagement and workaholism in comparison to the other groups. In addition, the GLM for repeated measures showed that there were no significant mean-level changes within this class. Hence, this class was labeled "high stable WE - average stable WH".

The managers (n = 85, 18%) in the second largest class (i.e., class 1) showed high initial levels of work engagement that significantly decreased over time, $F(1, 84) = 26.09$, $p < .001$. In addition, this class showed the lowest levels of workaholism, which remained stable over time. Thus, this class was labeled "high decreasing WE - low stable WH". A similar profile and development over time emerged among class 3 (n = 29; 6%), which was labeled "low decreasing WE - low stable WH". The decrease in work engagement was significant also in this class, $F(1, 28) = 10.85$, $p < .01$, while the levels of workaholism remained stable over time. Finally, one class (n = 33; 7%) (i.e., class 2) emerged in which the initial levels of work engagement were relatively low but increased significantly over time, $F(1, 33) = 111.34$, $p < .001$. In addition, the level of workaholism slightly decreased over time, $F(1, 33) = 4.77$, $p < .05$. Hence, this class was labeled "low increasing WE - average decreasing WH".

In light of these results, our second hypothesis was supported. To summarize, four groups of managers differing in how their levels of work engagement and workaholism developed across time were identified. The largest group (68%) remained stable in both work

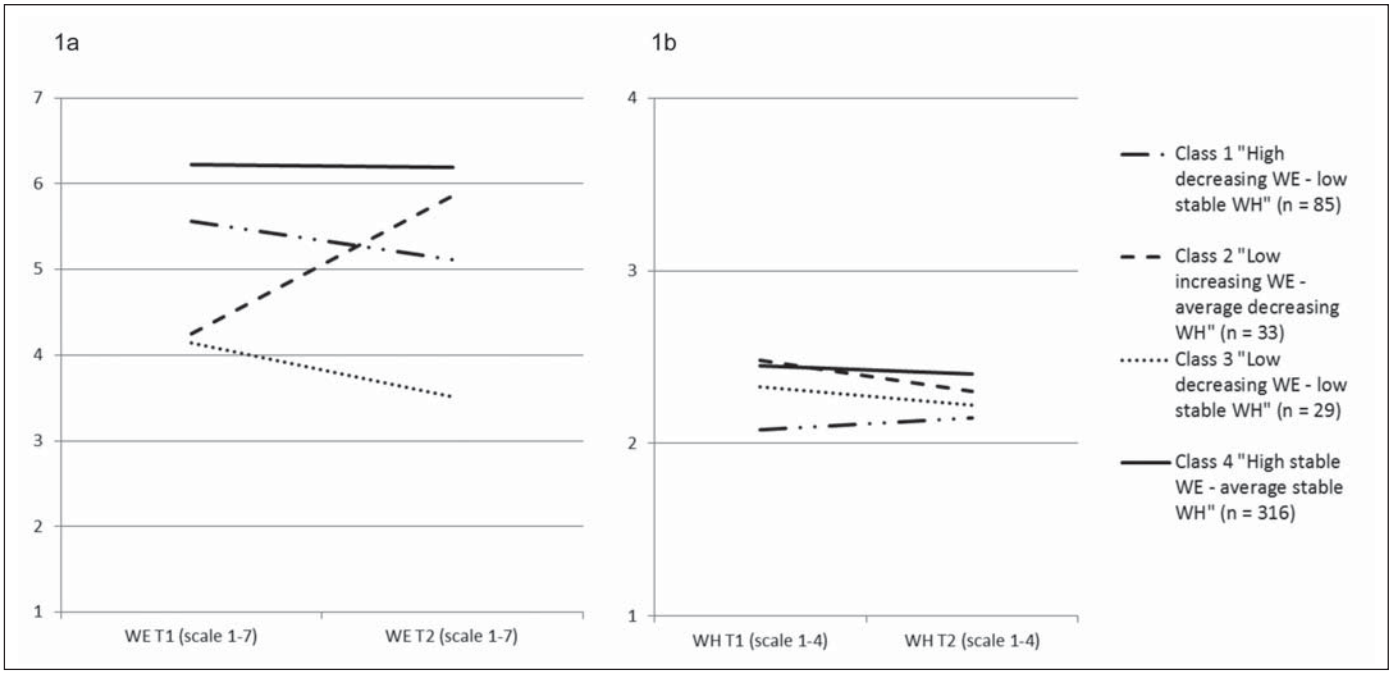

Figure 1a-b. The class solutions for work engagement and workaholism
Note. WE = Work Engagement; WH = Workaholism. The classes are presented in the order generated by the GMM.
ANOVA for work engagement T1: $F(3, 456) = 167.94$, $p < .001$, 4 > 1, 2, 3; 1 > 2, 3 and T2: $F(3, 458) = 169.74$, $p < .001$, 3 < 1, 2, 4; 1 < 2, 4. ANOVA for workaholism T1: $F(3, 458) = 12.59$, $p < .001$, 1 < 2, 4 and for T2: $F(3, 459) = 5.97$, $p < .01$, 1 < 4 (Bonferroni pairwise comparisons, $p < .001$).

engagement and workaholism, whereas two groups were stable in workaholism but showed a decrease from either a high (18%) or low (6%) initial level of engagement. A relatively small group (7%) changed in both work engagement (increase) and workaholism (decrease).

Phase 4: Work engagement-workaholism classes, sociobiographics, and job change

According to the χ^2 and *F*-tests, there were no statistically significant differences in the distribution of gender, age, education or management level between the four work engagement-workaholism classes. However, the four classes differed in weekly working hours: $F(3, 403) = 4.94$, $p < .01$ at Time 1 and $F(3, 403) = 7.05$, $p < .001$ at Time 2. Bonferroni pairwise comparisons revealed that managers in the "high stable WE - average stable WH" class ($M = 46.0$ at Time 1 and 45.2 at Time 2) reported more working hours than those in the "high decreasing WE - low stable WH" class ($M = 42.3$ at Time 1 and 41.3 at Time 2).

The interdependency between the work engagement-workaholism classes and job change was substantial and statistically significant, $\chi^2(3) = 19.64$, $p < .001$. As inferred from the adjusted residuals in Table 3, job changers, i.e., movers, were overrepresented and stayers underrepresented in the "low increasing WE - average decreasing WH" class. As shown in Table 3, 49% ($n = 16$) of the managers in this class changed their job during the follow-up, compared to the 10-21% observed in the other classes. A further observation was that job change in the "low increasing WE - average decreasing WH" class was typically voluntary in comparison with the other classes (adjusted standardized residual 3.7), and thus not caused by layoffs or dismissals. Clearly, voluntary job change increased work engagement and decreased workaholism in the group with low initial levels of engagement and average workaholism. Hence, our third and fourth hypotheses were partly supported.

Table 3
Interdependency between the work engagement-workaholism classes and job change ($n = 463$)

Class	Stayers n adj. res.	Movers *n* adj. res.	Total
1. High decreasing WE - low stable WH	73 1.7	12 -1.7	85
2. Low increasing WE - average decreasing WH	17 **-4.1**	16 **4.1**	33
3. Low decreasing WE - low stable WH	26 1.4	3 -1.4	29
4. High stable WE- average stable WH	251 0.1	65 -0.1	316
Total	367	96	463

Note. Adj. res. = adjusted residuals. Those marked with bold indicate interdependency between the work engagement-workaholism classes and job change.

Discussion

The present study focused on change in managers' levels of work engagement and workaholism over a two-year period. As a prerequisite for further analyses, the first aim was to establish the extent to which work engagement and workaholism are independent constructs. The second aim was to identify latent longitudinal profiles from the managers' work engagement and workaholism scores, in order to detect long-term stability and change patterns in these constructs. The final aim was to investigate how job change during the two-year study period was linked to the managers' work engagement and workaholism profiles.

The first main finding of our study was that work engagement and workaholism are empirically different and uncorrelated constructs. This finding is in line with the conceptual assumptions of the circumplex model, as applied to the work context (Bakker & Oerlemans, 2011; Salanova et al., 2013) as well as with previous research findings according to which work engagement and workaholism are empirically distinct (Schaufeli, Taris et al., 2008; Schaufeli, Shimazu et al., 2009; van Wijhe et al., 2011). According to the circumplex model (Bakker & Oerlemans, 2011), the main difference between these two high activation states has to do with the degree to which work is experienced as pleasurable. That is, work engagement represents a positive and pleasurable way to work hard, whereas negative and unpleasant feelings are predominant in workaholism (see also Salanova et al., 2013; van Wijhe et al., 2011).

Our second finding indicates that, also at the intra-individual level, work engagement and workaholism are largely independent psychological states. Although our results revealed some heterogeneity in workaholism among the managers, the four identified profiles differed from each other mainly in the level of and change in work engagement. That is, among two groups, comprising 24% of the managers, the level of work engagement significantly decreased over time, whereas simultaneously the level of workaholism remained unchanged. However, the results also revealed a small group of managers (7%) who showed a simultaneous increase in work engagement and decrease in workaholism, which indicates that these managers developed in a more positive direction. This result lends further support to the previous observation that work engagement and workaholism do not typically co-occur within an individual: in one group, at least, both states seemed to develop in opposite directions. An interesting additional finding was that the managers who reported the highest stable levels of work engagement also reported the highest stable levels of workaholism. However, given the rather low mean level of workaholism in this group, it would be premature to conclude that these managers represent a class that might be characterized as "engaged workaholics".

Following the logic of the circumplex model (Russell, 1980; see also Bakker & Oerlemans, 2011), the participants of the present study were in a deactivation state in terms of workaholism, as the observed mean levels were low, and at the same time in a high activation state in terms of work engagement, as indicated by the high mean levels. Thus, when analyzed in accordance with the circumplex model, the participants turned out to be a rather homogeneous group, as workaholism only slightly differentiated the four work engagement-workaholism profiles. In comparison with the other constructs of the circumplex model (i.e., work engagement, burnout, job satisfaction), workaholism can be argued to represent more of a behavioral tendency than an affective response to one's job. That means that job-related affective states such as anxiety, tension or uneasiness might more properly characterize the high activation, low pleasure type of occupational well-being than workaholism (see e.g., Warr, 1994). However, it might be that investigation of groups according to the subdimensions of work engagement and workaholism would reveal more intra-individual heterogeneity in this relationship, as different correlation patterns between subdimensions have previously been reported (e.g., Schaufeli, Tauris et al., 2008).

Our third result indicates that while the managers' levels of work engagement and workaholism were relatively stable over the two-year study period, they also showed some change over time. In particular, the mean levels of workaholism showed high absolute stability over time, which could indicate that workaholism is in part personality-based (Andreassen, Hetland, & Pallesen, 2010; Burke, Matthiesen, & Pallesen, 2006). As expected, the increases in work engagement and decreases in workaholism were largely explained by job change during the study period. Managers who had changed their jobs reported more work engagement and less workaholism. Since typically job change was voluntary, it can be

speculated that managers left their old jobs for better new jobs. Most likely, they were dissatisfied for one reason or another with their old jobs, which had probably led them to experience lower levels of engagement and higher levels of workaholism. The positive effect of job change on these managers' well-being demonstrates on the one hand that work engagement and workaholism also depend on the current work situation. On the other hand, our finding could perhaps be explained by the "honeymoon effect", which refers to employees' tendency to paint an overly positive picture of their new job (Boswell et al., 2009). Therefore, longer follow-ups with several additional measurements are needed to further investigate this issue, as it has been suggested that it takes about two years to reach normal equilibrium after job change (Dunford et al., 2012). In addition, the reason why work engagement decreased among nearly one-third of the participants merits further investigation. Hence, in future studies, the role of different job demands and resources in the maintenance of stability or as triggers for change should be investigated.

Finally, two limitations should be taken into account when generalizing the findings of the present study. First, our sample exclusively comprised Finnish managers, and therefore the results do not permit firm conclusions to be drawn about managers in other countries. More cross-national/cultural evidence, including in other occupational groups, is needed to establish the interrelations between work engagement and workaholism at the universal level. Second, our longitudinal study extended over a relatively short follow-up period with only two measurement points. For these reasons we were not able to detect any latent groups with curvilinear changes in work engagement and/or workaholism.

Overall, our study contributes to the existing literature by applying a longitudinal person-centered approach to the investigation of individual differences in work engagement and workaholism among Finnish managers. On the basis of the different profiles of work engagement and workaholism identified, the following conclusions can be drawn: *first*, work engagement and workaholism are distinct psychological constructs; *second*, work engagement and workaholism are both stable and a dynamic in nature; and *third*, job change relates to changes in work engagement and workaholism.

From a practical perspective, our study results contribute importantly to earlier research, based on comparisons between groups, that has documented the existence of two types of heavy investment in work: 'good' (i.e., work engagement) and 'bad' (i.e., workaholism, Gorgievski & Bakker, 2010; Salanova et al, 2013; Schaufeli, Taris et al., 2006; Schaufeli, Taris, & Bakker, 2008; Schaufeli, Shimazu et al , 2009; van Beek et al., 2012, van Wijhe et al. 2011). Our findings extend this result by showing that intra-individual engagement and workaholism levels show different patterns across time for different groups. Taken together, this means that managers, along with HR and occupational health professionals, should look beyond the surface of heavy work investment and discriminate between "good" and "bad" forms. Although the levels of work engagement and workaholism of most of the managers in our study remained relatively stable across time, we also found meaningful changes in certain groups. One group (class 2) improved in well-being whereas another group (class 3) deteriorated. So despite the predominance of stability, change – for the better or worse – is possible. Yet more important from a practical perspective, is our observation that after voluntary job change occupational well-being improved (i.e., engagement increased and workaholism decreased). This implies that voluntary job mobility (within and/or between employers') should be stimulated, as this may assist employees to gravitate towards the kinds of jobs that fit them best in terms of well-being.

Conflicts of interest

The authors of this article declare no conflicts of interest.

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