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Burnout and engagement: Identical twins or just close relatives?

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ABSTRACT

Past research has frequently cast doubts on the theoretical and empirical distinction between the concepts of work engagement and burnout. Drawing on cross-sectional survey data from 1535 Dutch police officers, the current study examined (a) the associations among the two core dimensions of burnout (i.e. exhaustion and cynicism) and work engagement (vigor and dedication); and (b) the concurrent and discriminant validity of these dimensions by relating these four dimensions to various important job demands and job resources. Confirmatory factor analysis showed that the distinction between burnout and engagement is elusive. Moreover, although the indicators of burnout and those of engagement differed in terms of their job-related correlates, these patterns of associations only partly supported previous theorizing on the antecedents of burnout and engagement. We conclude that burnout and engagement are to a large degree overlapping concepts and that their conceptual and empirical differences should not be overestimated.

1. Introduction

Although the relationship between burnout and engagement has received considerable attention during the past 15 years, at present it is still unclear whether these concepts are empirically and conceptually different or whether they constitute two faces of the same coin (Cole, Walter, Bedeian, & O'Boyle, 2012; Leon, Halbesleben, & Paustian-Underdahl, 2015). To some degree this is not surprising, since engagement and burnout focus on the same underlying phenomena: energy, involvement and efficacy (Maslach & Leiter, 1997). Indeed, it has been argued that burnout and engagement are the opposite poles of a single continuum that can be covered fully with one instrument (the Maslach Burnout Inventory, Maslach, Jackson, & Leiter, 1996). However, as Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) noted, the *absence* of burnout does not necessarily imply the *presence* of engagement or vice versa, leading these authors to develop an instrument (the Utrecht Work Engagement Scale, UWES) that specifically tapped engagement. After publication of this measure research on work engagement has grown exponentially (e.g., see Bakker, Schaufeli, Leiter, & Taris, 2008, for an overview), but the question whether engagement and burnout are really different concepts is still open. The present study addresses this question, drawing on a large dataset of 1535 Dutch police officers. Using confirmatory factor analyses we test a number of theory-grounded models to examine (1) the association(s) among the indicators of burnout and engagement, and (2) their job-related correlates, drawing on the two main processes described in the Job demands-Resources (JD-R) model (Bakker, Demerouti, & Sanz-Vergel, 2014; Schaufeli & Bakker, 2004).

1.1. Burnout versus engagement

1.1.1. Burnout

Maslach (1993) defined burnout as "a psychological syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among professionals who work with other people in some capacity" (p. 20). Emotional exhaustion referred to feelings of being overextended and depleted of one's emotional resources; depersonalization involves having an indifferent and negative attitude towards others, especially the recipients of one's services; and (reduced) personal accomplishment refers to a decline of one's feeling of competence and achievement in one's work. In line with this conceptualization, Maslach and Jackson (1986) devised the three-factor Maslach Burnout Inventory (MBI) that measured burnout among human services professions. However, there is no particular reason why the occurrence of burnout as a general phenomenon should be restricted to the human services sector (Maslach & Leiter, 1997). Therefore, Schaufeli, Leiter, Maslach, and Jackson (1997); developed a general version of the MBI – the Maslach Burnout Inventory-General Survey, MBI-GS – that was suitable for measuring burnout across a wide range of occupations, including non-contactual professions. In their version the three components of burnout were conceptualized in slightly broader terms, referring to the job rather than to personal

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relationships that could be part of that job (Maslach, Schaufeli, & Leiter, 2001). The structure of the MBI has been examined in a number of factor-analytic studies (among others, Schaufeli et al., 2002; Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Taris, Scheurs, & Schaufeli, 1999). These studies showed that the three dimensions of the MBI could be distinguished empirically and that the association between exhaustion and depersonalization (or cynicism, as this dimension was labeled in the MBI-GS) was especially strong, leading Schaufeli et al. (2002) to conclude that these two concepts constituted the "core" of burnout.

1.1.2. Engagement

In the slipstream of the positive psychology movement that evolved around the turn of the century (e.g., Seligman & Csikszentmihalyi, 2000), Maslach, Schaufeli and colleagues supplemented the concept of burnout (which represents a negative psychological state) with its positive antithesis: work engagement (Maslach et al., 2001). Their work on this concept took two paths. On the one hand, Maslach and Leiter (1997) argued that burnout can be seen as an erosion of engagement, with energy turning into exhaustion, involvement turning into cynicism, and efficacy turning into ineffectiveness. Thus, engagement is characterized by energy, involvement and efficacy, the direct opposites of the three burnout dimensions. By implication, engagement can be measured by the MBI; phenomenologically, burnout and engagement are conceptual twins in that they are the opposite poles of a continuum that is fully covered by the MBI (Maslach et al., 2001).

On the other hand, Schaufeli et al. (2002) argued that engagement could not be measured in terms of the MBI, since the absence of burnout does not automatically imply the presence of engagement. To tap engagement, the Utrecht Work Engagement Scale (UWES) was developed. Schaufeli et al. defined engagement as a persistent, positive affective-motivational state of fulfillment that is characterized by three dimensions: vigor (i.e., high levels of energy, resilience and persistence), dedication (i.e., involvement, feelings of significance, pride and inspiration) and absorption (a pleasant state of immersion in one's work). To a large degree this conceptualization covers the same underlying dimensions as burnout: exhaustion and vigor both refer to the energetic component of worker well-being, while cynicism/depersonalization and dedication both refer to commitment. There is no analogue for absorption in the MBI, and it remains unclear whether this dimension really taps engagement (Taris, Schaufeli, & Shimazu, 2009). In practice, many studies focusing on engagement include only the vigor and dedication dimensions, arguing that these constitute the core of engagement.

1.1.3. Engagement versus burnout: factor-analytic evidence

Several researchers have examined the structure of the UWES, frequently in conjunction with that of the MBI to examine the degree to which both concepts could be distinguished empirically. For example, Schaufeli et al. (2002) found in a two-sample study among Spanish undergraduate students and employees working for public and private companies that a two-factor model with exhaustion and cynicism loading on one factor and vigor, dedication, absorption and professional efficacy loading on the other fitted the data best; a result that was later confirmed by Schaufeli and Bakker (2004) in a study among employees from four different Dutch service organizations and Schaufeli, Taris, & Van Rhenen, (2008) in a sample of Dutch telecom managers. In a factor-analytic study among two university student samples, a Spanish convenience sample and a sample of employees working with information and communication technologies, Schaufeli and Salanova (2007) also found that efficacy loaded on engagement. In this study, the two central burnout dimensions (exhaustion and cynicism) were complemented with a novel *in*efficacy scale, suggesting that the professional efficacy-dimension of the MBI can be considered an indicator of engagement.

In an interesting three-sample study using item-response theory among Dutch call center employees, administrative staff of a pension fund and employees of an insurance company, Gonzalez-Roma, Schaufeli, Bakker, and Lloret (2006) found that the associations among the items of the four dimensions of engagement and burnout (vigor, dedication, exhaustion and cynicism) were accounted for by two bipolar dimensions, namely "energy" (accounting for the items of vigor and exhaustion) and "identification" (accounting for the items of dedication and cynicism), respectively. Similar findings (using confirmatory factor analysis) were reported by Demerouti, Mostert, and Bakker (2010) for a sample of South African construction workers. Thus, this research suggests that when focusing on their core dimensions, burnout and engagement cover the same two underlying dimensions, as suggested earlier by Maslach et al. (2001).

1.1.4. Correlates with other concepts

Apparently, factor-analytic studies show that the distinction between burnout and engagement is perhaps not as clear-cut as would be desirable. Another way to examine whether burnout and engagement tap different concepts is to focus on their associations with other variables. One model that is relevant to this issue is the Job demands-Resources (JD-R) model (Bakker et al., 2014; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). This model distinguishes between two basic categories of job characteristics: job demands and job resources. *Job demands* are defined as "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs" (Demerouti et al., 2001; p. 501). *Job resources* refer to "those physical, social or organizational aspects of the job that [are] functional in achieving work goals; [that] reduce job demands and the associated physiological and psychological costs; [and/or] stimulate personal growth and development" (p. 501).

Although the distinction between these two categories has been criticized for being overly parsimonious (e.g., no distinction was made between "challenge" and "hindrance" demands, Crawford, LePine, & Rich, 2010; Taris, Leisink, & Schaufeli, in press), the model has become the gold standard in examining the associations between work characteristics and worker well-being in general (and burnout and engagement in particular). The core of the JD-R model consists of two largely independent processes. The *energetic* or *health impairment process* holds that the relation between job demands and outcomes (especially health) is mediated by strain (e.g. burnout). The *motivational process* links job resources to positive outcomes (especially performance), proposing that this relation is mediated through work engagement. Note that there are several versions of the JD-R model around, differing in sometimes subtle ways. Most importantly, different versions of the JD-R vary in two main respects:

(1) the outcomes considered and their interrelations.The first formulation of the JD-R model (Demerouti et al., 2001) distinguished between exhaustion and disengagement. The latter is a dimension of burnout that "closely resembles" (p. 500) the cynicism dimension of the MBI-GS, and was assumed to be an outcome of the presence or absence of job resources. However, in later versions of the JD-R model both burnout dimensions were considered as outcomes of the energetic/health impairment process, i.e. as outcomes of job demands, with work engagement taking the place of disengagement (e.g., Schaufeli & Bakker, 2004). Further, exhaustion has been considered an antecedent of disengagement (Bakker, Demerouti, & Verbeke, 2004), but in other instances the usually substantial association between strain and motivation was not interpreted causally anymore (Bakker & Demerouti, 2007). Further, later versions of the JD-R model tended to focus on relatively broad categories of outcomes, with burnout being only one form of job strain and work engagement representing an instance of the broader class of motivational behaviors (e.g., Bakker & Demerouti, 2007);

(2) the role of demands and resources. The earliest version of the model (Demerouti et al., 2001) proposed that resources were exclusively linked with disengagement. However, Schaufeli and Bakker (2004) did not only include an effect from job resources on engagement, but also a direct effect from resources on burnout that did not return in later incarnations of the model (e.g., Bakker et al., 2014). In these later versions of the model the main effect of resources on burnout was replaced with two interaction effects, with demands moderating the effect of resources on "motivation" and resources moderating the effect of demands on "strain". This also means that the simple main effect of demands on exhaustion (or strain) proposed by Demerouti et al. (2001) was assumed to be contingent upon the level of resources present on the job.

Basically, this overview shows that there is no single version of the JD-R model. Yet, at the heart of all versions of the JD-R model lie two main effects, namely the effects of demands on strain/burnout and that of resources on motivation/engagement, suggesting that these two effects constitute the core of the model. Therefore, in this study we focus on these two main effects when referring to the JD-R model.

If these two main assumptions of the JD-R model hold up, the indicators of work engagement should primarily (and preferably exclusively) be related to the job resources included in this study, while the burnout indicators should primarily (and preferably exclusively) be associated with the job demands studied here. If present, such differential patterns of correlates would provide a strong indication that burnout and engagement tap into different nomological frameworks and, hence, that − in spite of their conceptual resemblance − they are different concepts. Conversely, if burnout and engagement show similar patterns of correlates, there would be further reason to doubt whether they really present two different constructs (cf. Cole et al., 2012).

1.2. The current study

Based on these considerations, the present study addresses two main questions. (1) To what extent are burnout and engagement separate constructs? To this aim, we compare several confirmatory factor-analytic models for the associations among the items of four selected dimensions of burnout and engagement. Specifically, previous research has demonstrated that vigor and dedication constitute the two core elements of engagement and that the absorption dimension is less central to this concept (for example, see Bakker et al., 2008; Demerouti, Mostert, & Bakker, 2010). Similarly, exhaustion and cynicism are considered the two central dimensions of the burnout concept, as opposed to its third dimension, professional efficacy (Demerouti et al., 2010; Gonzales-Roma et al., 2006; Lee & Ashforth, 1996). Insofar as there is overlap among engagement and burnout, this overlap is especially likely to occur for exhaustion and vigor (and dedication and cynicism), because these dimensions were construed as each other's conceptual antipodes (Schaufeli et al., 2008). Thus, examining the distinction among these specific dimensions is especially important. In the present study we therefore focus on the four central dimensions of burnout and engagement: exhaustion and cynicism for burnout, and vigor and dedication for engagement. (2) To what extent are these four core dimensions of burnout and engagement differentially related to job demands and job resources? Drawing on the JD-R model, we expect that the two burnout indicators will primarily be related to the job demands included in this study, such that higher demands are associated with higher scores on the burnout indicators (Hypothesis 1). Conversely, the two indicators of engagement should primarily be related to the job resources studied here, such that higher levels of resources are associated with higher scores on the indicators of engagement (Hypothesis 2).

2. Method

2.1. Sample and procedure

A cross-sectional on-line survey study was carried out in the national Dutch police force at the request of the Dutch Scientific Research and Documentation Centre, which is part of the Dutch Ministry of Security and Justice. At the time of collecting the data (2013), the Dutch police force consisted of 26 regional corps incorporating slightly more than 51,000 employees in total. Of these, 24 agreed to participate. A stratified random sample of 4224 employees was drawn from the files of the participating corps, making sure that each of six predefined main task groups of the Dutch police force (together covering all jobs in the corps) would be sufficiently well represented in the data. As some of the information in the files of the participating corps was outdated, 3740 employees received an invitation to participate by email. This message introduced the aim of the study, indicated that participation was anonymous and that participation was endorsed by the Dutch ministry of Security and Justice, and provided a link to the questionnaire.

In total 1535 employees completed the questionnaire fully (41.0% response rate), which was considered acceptable (compare Baruch & Holtom, 2008). Participants' age ranged from 19 to 64 years (M = 43.3, SD = 11.7), 62% were male and 38% female. The educational level was low (some vocational schooling at most) for 25%, middle (middle level of vocational schooling) for 55%, and high (college and university degree) for 20%. As intended, all ranks and jobs in the police force were included in the study: 25% were administrative or technical personnel, 16% were junior police officer, 17% senior police officer, 24% were sergeant, 12% were (chief) inspector, and 6% were (chief) commissioner. This distribution corresponded well with the percentages of employees in the population in each of these six groups. Participants had worked in the police force for 0–44 years (M = 17.8, SD = 12.7), and had held their current position for 0–38 years (M = 6.1, SD = 5.7). Nonresponse analysis revealed that especially male and younger (< 25 years old) participants were slightly overrepresented in the sample as compared to the target population, but also that these differences were relatively small (4.3% at most, cf. Van Beek, Taris, & Schaufeli, 2013).

2.2. Variables

To maximize the relevance of the questionnaire, the choice for the specific concepts included in this study was based on a series of semi-structured qualitative interviews with 20 members of the different strata in the target group (Van Beek et al., 2013). The results of the qualitative part of the study − including an inventory of concepts to be included in the online questionnaire − were discussed with and approved by a small team of experts in the area of policing and occupational health psychology who served as a sounding board for the study.

2.2.1. Burnout and engagement

Burnout was measured with 9 items of the Dutch version of the Maslach Burnout Inventory-General Survey (Schaufeli & Van Dierendonck, 2000). Five items tapped exhaustion, including "I feel mentally exhausted by my work". Four items measured cynicism, with "I doubt the usefulness of my work" as a typical item. These concepts tap the two central aspects of burnout (cf. Schaufeli & Taris, 2005). Work engagement was measured with 6 items from the short version of the Utrecht Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). Three items tapped vigor (including "At my work, I feel bursting with energy"), three other items measured dedication ("I am enthusiastic about my work"). These two concepts tap the core of engagement (Bakker, Schaufeli, Leiter, & Taris, 2008). All items tapping burnout and engagement were measured on 7-point scales, ranging from 0 ("never")

Table 1
Job demands and job resources; number of items, reliabilities, means and standard deviations.

job demands[$]	*# items*	*example item*	α	*M*	*SD*
Workload[2]	5	Do you have to work very fast?	0.86	2.59	0.77
administrative demands [3]	6	At my work there are many unnecessary rules and prescriptions	0.84	3.40	0.75
mental demands [2]	4	Do you find your work mentally demanding?	0.80	3.86	0.66
emotional demands [2]	3	Do you get into emotionally demanding situations at work?	0.75	2.46	0.73
role uncertainty [2]	3	Do you know exactly what your responsibilities at work are?[1]	0.80	2.19	0.79
job uncertainty [2]	4	Do you need more certainty about whether you can keep your job next year?	0.93	2.09	1.21
Intimidation [4]	5	To what extent were you personally intimidated by civilians in the last 12 months?	0.62	1.28	0.31
job resources					
autonomy [2]	5	Can you decide yourself how you execute your work?	0.86	3.28	0.78
task variation [2]	3	Is your work varied?	0.74	3.66	0.77
social support supervisor [2]	4	Can you count on your direct supervisor when you get difficulties in your work?	0.93	3.60	0.96
growth opportunities [2]	2	I have enough opportunities to develop myself in the police force	0.83	2.86	0.99
salary [2]	2	Do you think your pay corresponds with the work you do?	0.95	1.98	1.03

Note. All items were measured on a five-point scale (1–5), with the exception of Intimidation which was measured on a four-point scale (1–4). [1] reversed. [2]Source: Van Veldhoven et al. (2002). [3]Source: Pandy & Scott (2002). [4]Source: Van den Bossche et al. (2008).

to 6 ("daily").

2.2.2. Job demands

Seven job demands were included in the study. Table 1 presents descriptive information for the scales measuring these demands, including sample items, reliabilities (Cronbach's alpha), means and standard deviations. Most correlations between these job demands were modest. The highest correlation was that between work load and mental demands, $r = 0.47$.

2.2.3. Job resources

The questionnaire included 7 job resources, all taken from Van Veldhoven, Meijman, Broersen, and Fortuin (2002). Most correlations between these job resources were modest to high. The highest correlations were between social support from the supervisor on the one hand and social support from coworkers, $r = 0.60$, and feedback, $r = 0.56$, on the other. Another high correlation was found for feedback and growth opportunities, $r = 0.56$. Of these four variables, social support from supervisor and growth opportunities were more strongly related to our measures for burnout and engagement than social support from coworkers and feedback. To reduce multicollinearity, we therefore removed social support from coworkers and feedback from our job resources. The highest remaining correlation was that between social support from supervisor and growth opportunities, $r = 0.40$. A preliminary multicollinearity analysis for the combined 7 job demands and the remaining 5 job resources showed a maximum Variance Inflation Factor (VIF) of 1.6, which is well below recommended thresholds (O'Brien, 2007). More information on these job resources can be found in Table 1.

2.3. Statistical analysis

The data were analyzed with structural equation modeling techniques as implemented in PRELIS 2 (Jöreskog & Sörbom, 1996a) and LISREL 8 (Jöreskog & Sörbom, 1996b). PRELIS was used for data screening and to create the covariance matrices that were used as input in the LISREL program. Preliminary inspection of the data revealed that especially the items representing burnout and engagement were skewed and had a high kurtosis, thus violating the assumption of having normally distributed data. This was also the case for some of the job demands (e.g., intimidation) and job resources (e.g., salary). Therefore, in all LISREL analyses, Robust Maximum Likelihood (RML) estimation (Boomsma & Hoogland, 2001) was used. In RML, the standard errors of the parameter estimates are corrected for non-normality by using the asymptotic covariance matrix. For evaluating the fit of the models, the Satorra-Bentler Chi Square for non-normal distributions (χ^2), the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) were used. Values of 0.95 and above for CFI, and values of 0.08 and below for RSMEA and SRMR indicate a good fit of the model (Hu & Bentler, 1998).

For the first research question ("to what extent are burnout and engagement separate constructs?"), a series of six confirmatory factor analyses (CFA) was conducted. In the first model (M_1), a single latent factor loaded on all burnout and engagement items. In the other five models, four latent factors (exhaustion, cynicism, vigor and dedication) loaded on the corresponding burnout and engagement items. Of these five models, Model 2 (M_2) was the most restricted model. In M_2, the four first-order latent factors (exhaustion, cynicism, vigor and dedication) were forced to be independent, that is, they were considered unrelated. Thus, this model corresponds with the idea that the dimensions of burnout and engagement are independent and separate concepts. In Model 3 (M_3), a single second-order factor – 'well-being at work' – loaded on all four first-order factors. This model tests whether the four clusters of items (corresponding with exhaustion, cynicism, vigor and dedication), tap at a higher level the same underlying concept. Model 4 (M_4) tests whether the distinction between the two burnout indicators versus the two engagement indicators is paramount. In M_4 two correlated second-order factors corresponding with burnout (with the first-order concepts exhaustion and cynicism as its indicators) and engagement (with vigor and dedication as its indicators) accounted for the data. In Model 5 (M_5), two different correlated second-order factors were defined. One second-order factor represented the energy dimension of burnout and engagement (with exhaustion and vigor as its indicators), the other second-order factor was the commitment factor (with cynicism and dedication as its indicators). In a sense, this model tests whether Maslach and Leiter's (1997) assumption that the distinction between "energy" and "involvement" is prevailing. Finally, Model 6 allowed all four first-order factors (exhaustion, cynicism, vigor and dedication) to correlate freely. Therefore, this model assumes that the associations among these concepts cannot be accounted for by a theoretically meaningful second-order factor structure.

The second research question was "to what extent are the four core dimensions of burnout and engagement differentially related to job demands and job resources?" Hypotheses 1 and 2 proposed that the burnout indicators would primarily be related to the job demands, whereas the indicators of engagement would primarily be associated with the job resources. To address this issue, in Models 7 (M_7) and 8 (M_8) the four correlated latent factors of M_6 were regressed on the 7 job demands and the 5 job resources. These job demands and job resources were entered as continuous exogenous variables. To limit the complexity of the model, no latent factors were specified for these variables. Rather, the scale scores were used as observed variables. In these models, the latent factors with a negative valence, i.e., exhaustion and

Table 2
Fit of the models in the CFA.

Model	Description	SB χ^2	*df*	$p <$	CFI	RMSEA	SRMR
M_1	One single latent factor	5383	90	0.001	0.90	0.129	0.196
M_2	Four unrelated latent factors	2403	90	0.001	0.90	0.130	0.430
M_3	Single second order factor	629	86	0.001	0.96	0.064	0.093
M_4	Two second order factors: Burnout vs. Engagement	534	85	0.001	0.97	0.059	0.062
M_5	Two second order factors: Energy vs. Commitment	630	85	0.001	0.97	0.065	0.100
M_6	Four related latent factors	471	84	0.001	0.97	0.055	0.049
M_7	Regression on job demands and resources: identical weights	823	252	0.001	0.99	0.038	0.060
M_8	Regression on job demands and resources: different weights	726	216	0.001	0.99	0.039	0.034

cynicism, were recoded into low exhaustion and low cynicism by providing negative starting values for the loadings on the items. As a result, the four latent factors all have a positive valence. Moreover, these latent factors are standardized, meaning that their effects can easily be compared. In M_7 the regression weights of the relationships between the job demands and job resources with the four latent factors were restricted to be equal for each of the four latent factors. So, all job demands and job resources have similar regression weights with low exhaustion, low cynicism, vigor and dedication, suggesting that burnout and engagement are the flipsides of the same coin. In M_8 these equality constraints were lifted, meaning that the effects of the job demands and job resources on the four latent well-being indicators could vary freely, showing whether their effects were contingent on the type of well-being indicator.

3. Results

3.1. To what extent are burnout and engagement separate constructs?

In addressing this research question, a series of six confirmatory factor-analytic models (M_1-M_6) was specified, tested and compared. Table 2 presents the fit indexes for these models. As this table shows, the fit of both M_1 (with a single first-order factor) and M_2 (with four unrelated first-order factors) was unacceptable, with none of the fit indexes meeting their criterion values. Apparently, the interrelations between the engagement and burnout items cannot adequately be represented by a single latent factor, nor can the four dimensions of burnout and engagement be considered as independent and separate concepts.

All other models (M_3 to M_6) showed acceptable fit, although the model with a single second-order factor (M_3) and the model with two bipolar second-order factors (M_5) showed relatively large residuals as evidenced by a high value for SRMR. In M_3, a single second-order factor loaded on all four first-order factors. Interestingly, in this model the explained variance of the latent first-order factors was 40% for exhaustion, 65% for cynicism, 86% for vigor and 84% for dedication. Apparently, the second-order factor represented well-being better than ill-being at work. In M_5, the two second-order factors (energy and commitment) correlated 0.94 and shared 88% of their variance, and its fit indexes were about equal to or slightly worse than those of M_3. Apparently, a main distinction between the energetic and the commitment components of well-being at work does not account well for the associations among the indicators of burnout and engagement.

Not only did models M_4 and M_6 fit the data well, they also fitted the data better than models M_3 and M_5. M_4 distinguished between two major second-order factors corresponding with burnout (with indicators exhaustion and cynicism) and engagement (with indicators vigor and dedication), respectively. Apparently, the main distinction between the indicators of burnout (exhaustion and cynicism) versus the indicators of engagement (vigor and dedication) works well for this dataset, although it should be noted that the two second-order factors burnout and engagement correlated −0.74, indicating that they have 55% of their variance in common. Model M_6 fitted the data even better, $\Delta\chi^2(M_4\text{-}M_6)$ with 1 $df = 63$, $p < 0.001$, with the other fit indexes being equal or even better than those obtained for M_4. In M_6 the four first-order factors (exhaustion, cynicism, vigor and dedication) could covary freely. Thus, although the main distinction between engagement and burnout is theoretically and empirically defendable, releasing the distinction between these two main second-order factors resulted in an even better fit to the data.

Table 3
The correlations among the four latent factors in Model 6.

	exhaustion	cynicism	vigor
cynicism	0.74		
vigor	−0.60	−0.69	
dedication	−0.47	−0.75	0.87

Note: All correlations significant at $p < 0.01$.

The correlations among the four latent factors in Model 6 are presented in Table 3. At −0.47 the correlation between exhaustion and dedication was relatively modest, the components of burnout (exhaustion and cynicism), and engagement (vigor and dedication) correlated strongly positively (*r*s were 0.74 and 0.87, respectively), and cynicism and dedication were strongly negatively related ($r = -0.75$). From this confirmatory factor analysis we thus conclude that whereas burnout and engagement can be distinguished empirically, for the major part they are overlapping aspects of worker well-being.

3.2. Relationships with job demands and job resources

Our second research question concerned the extent to which the four core dimensions of burnout and engagement (i.e., exhaustion, cynicism, vigor and dedication, as distinguished in model M_6) differentially relate to job demands and job resources. To examine this research question, the four correlated latent factors of M_6 were regressed on 7 job demands and 5 job resources. In these models, the latent factors with a negative valence, i.e., exhaustion and cynicism, were reversed. In M_7, the regression weights of the relationships between the job demands and job resources with the four standardized latent factors were restricted to be equal for each of the four latent factors. In effect, this model assumes that all demands and all resources relate in a similar way to each of the four well-being indicators. Thus, M_7 assumes that these four indicators are more or less equivalent and interchangeable and that in terms of their presumed antecedents, they do not differ. In Model 8 (M_8), these equality constraints were released, meaning that all job demands and job resources could freely influence each of the four latent factors. Comparison of models M_7 and M_8 can thus reveal whether the four dimensions of burnout and engagement should be considered as separate or as largely interchangeable concepts.

Table 2 presents the fit indices for M_7 and M_8. As this table shows, both models had a good fit. Whereas the fit of the unconstrained model M_8 was significantly better than that of M_7, $\Delta\chi^2$ ($df = 36$) = 96, $p < 0.001$, on the basis of the other fit indexes it is difficult to unequivocally denote one of these models as having a better fit than the other. Therefore, we conclude that both models adequately describe the relationships with the job demands and job resources. Table 4 shows that in M_7, the four latent factors indicating the well-being of police officers were negatively related to most job demands and positively related to most job resources. The strongest negative relations with job demands were with high work load ($\gamma = -0.13$) and high role

Table 4
Completely standardized regression weights (gamma) in the regression of the four latent factors on job demands and job resources.

Job demands	Model 7[#] all latent factors	Model 8[$]			
		exhaustion[%]	cynicism[%]	vigor	dedication
work load	−0.13*	−0.22*	−0.14*	−0.07	−0.05
administrative demands	−0.06	0.01	−0.17*	−0.08	−0.10
mental demands	−0.01	−0.10*	0.02	0.02	0.08
emotional demands	−0.08*	−0.15*	−0.11*	−0.03	−0.01
role uncertainty	−0.14*	−0.14*	−0.13*	−0.15*	−0.14*
job uncertainty	−0.03	−0.08*	−0.03	−0.02	0.02
intimidation	−0.00	−0.06	−0.05	0.05	0.05
Job resources					
autonomy	0.01	0.07*	−0.09*	−0.01	−0.03
task variation	0.18*	0.11*	0.18*	0.17*	0.24*
social support supervisor	0.15*	0.12*	0.19*	0.15*	0.18*
growth opportunities	0.22*	0.13*	0.25*	0.27*	0.29*
salary	−0.02	−0.01	−0.02	−0.01	−0.02
R^2	28%	28%	35%	31%	37%

Notes: * $p < 0.05$. [#] The regression weights were restricted to be equal for all four latent factors (low exhaustion, low cynicism, vigor and dedication). [$] The regression weights were allowed to vary freely. [%] Reversed.

uncertainty ($\gamma = -0.14$). The strongest positive relations with job resources were with growth opportunities ($\gamma = 0.22$) and task variation ($\gamma = 0.18$).

When examining the contributions of the job demands and job resources to the separate latent factors of exhaustion, cynicism, vigor and dedication (M_8), we found that for all job demands, with the exception of intimidation, higher levels of demands were related to higher levels of exhaustion and/or cynicism. Conversely, only one of the job demands, i.e., role uncertainty, was significantly related to vigor and dedication. These findings are largely in line with the assumptions of the JD-R model, which states that job demands primarily contribute to burnout rather than to engagement (Hypothesis 1 supported).

The contribution of the job resources to exhaustion, cynicism, vigor and dedication was less clear-cut. Although − according to the basic JD-R model − job resources should be mainly related to engagement, in 7 out of 10 cases we found that higher levels of resources were associated with lower levels of burnout (i.e. exhaustion and cynicism). Unexpectedly, high levels of autonomy were related to *higher* levels of cynicism. Additional analyses showed that autonomy was slightly positively related to cynicism, but after controlling for other job resources that were (more strongly) positively related to both autonomy and low cynicism, autonomy contributed negatively to the regression of low cynicism. As a result, including autonomy in the regression of low cynicism increased the positive contribution of other job resources (e.g., task variation). Thus, autonomy acted as a suppressor of the relationship between cynicism and other job resources. Conversely, in 6 out of 10 cases we found the expected positive associations between the resources in our study and the two engagement indicators (vigor and dedication). For both vigor and dedication, the job resources task variation, social support from the supervisor and growth opportunities contributed significantly. It is noteworthy that autonomy, a commonly studied job resource, did not uniquely contribute to either indicator of work engagement. Overall, the contributions of job resources to the indicators of burnout and engagement were only partly consistent with the predictions of the JD-R model (Hypothesis 2 partly supported).

4. Discussion

The present study was designed to address the conceptual and empirical distinction between burnout and engagement, two commonly-studied indicators of worker well-being. Using a large and high-quality cross-sectional data set of 1535 Dutch police officers holding different types of positions within their corps, we focused on two related questions: (1) To what extent are burnout and engagement separate constructs? And (2) to what extent are the four core dimensions of burnout and engagement differentially related to job demands and job resources?

4.1. Burnout versus engagement

As regards the issue whether burnout and engagement are different constructs, the results obtained in previous research provided mixed evidence. Whereas some studies could clearly and unambiguously distinguish between these two concepts, other studies provided weaker or no evidence for such a distinction. Interestingly, the findings of the current study fit *both* sets of findings. On the one hand, the confirmatory factor analyses presented in this study show that it is certainly not unreasonable (i.e. theoretically and empirically defendable) to make a main distinction between the indicators of burnout (exhaustion and cynicism) and those of engagement (vigor and dedication). Other models – including the model that (following Maslach and Leiter, 1997) made a main distinction between indicators of energy (i.e. vigor and exhaustion) and commitment (dedication and cynicism), and the model that assumed that all four indicators of burnout and engagement actually tapped a more general concept measuring 'overall worker well-being' – clearly did not fit the data as well as the model that distinguished between engagement and burnout.

On the other hand, our factor analyses indicated that the model distinguishing between burnout and engagement was not the model that fitted the data best. The model that did not specify any particular theory-grounded structure for the associations among the four indicators of burnout and engagement resulted in an even better fit to the data. This model − that was not tested in previous confirmatory factor-analytic research on the distinction between burnout and engagement − revealed that although it was possible to make a rough empirical distinction among the indicators of burnout and those of engagement, the correlations among these four indicators were generally high, to the degree where they largely tap the same aspects of worker well-being. Based on the factor-analytic findings only, it is difficult to conclude whether burnout and engagement are really different concepts. Even if this distinction would have been warranted empirically (i.e. if the model distinguishing between burnout and engagement would have been the single best-fitting model), it is unclear whether this distinction would hold water from a substantive point of view, due to the strong relationship between burnout and engagement.

One way of investigating this issue further is to see whether the indicators of burnout and engagement are differentially related to possible antecedents. Thus, to address our second research question we examined how a set of 7 job demands and 5 job resources − mostly tried-and-tested characteristics that are relevant to the general working population − were related to the indicators of burnout and engagement. If the distinction between engagement and burnout is valid, these two concepts should show different patterns of associations with other variables. Mainly drawing on the revised version of the Job demands-Resources model (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004), we assumed that the two indicators of burnout (or "strain") would primarily be related to the job demands (and less so to the job resources), and that the two indicators of engagement (or "motivation") would be strongly associated with the job resources (but less so to the job demands). Unfortunately, here, too, the findings were mixed. Whereas most job demands included in this study were significantly and as expected associated with the two indicators of burnout (but not

with the indicators of engagement), this was not the case for the job resources included in this study. Contrary to our expectations, these resources were equally related to both two burnout indicators, and the two indicators of engagement. These associations were largely, but not fully, in line with the two basic predictions of the JD-R model that demands would be primarily related to burnout and resources to engagement. However, note that effects of resources on burnout were proposed (and confirmed) in Schaufeli and Bakker's (2004) reconceptualization of the JD-R model. In this sense the findings obtained here for the resources are in line with at least part of the findings reported for more elaborate versions of the JD-R model than the "bare bones" version of the JD-R model tested here.

Note that the degree to which the predictions of the JD-R model were confirmed is only indirectly relevant to the main goal of this study, which was to examine whether burnout and engagement are really different concepts. The factor analyses conducted for this study did not provide compelling evidence for a strong conceptual distinction between these two concepts. Neither was there clear evidence that the four indicators of (low) burnout and engagement, i.e., low exhaustion, low cynicism, vigor and dedication, were differentially related to job demands and job resources. Indeed, our structural analyses showed that the model in which the effects of the work characteristics on the four indicators were constrained to be equal for each indicator fitted the data about as good as the model in which these effects could vary across indicators. However, when focusing on these unconstrained effects, it is noteworthy (and in line with the JD-R model) that job demands were consistently related to the indicators of burnout but not with indicators of engagement. This suggests that − if a valid distinction between burnout and engagement could be made − it would lie in their associations with job demands, rather than in their relationship with job resources. Nevertheless, we do not wish to overstate the differences in the relationships between the indicators of burnout and engagement with job demands, since the model in which all job demands and job resources related similarly to all four indicators of employee well-being received as much support as the model that differentiated between these indicators. We therefore conclude that also with regard to the relationships with job demands and job resources, no compelling evidence was found for the distinction between burnout and engagement.

4.2. Study limitations

Four main limitations and venues for future research of this study are worth discussing. Firstly, this research drew on a large, yet cross-sectional data set employing self-report measures. The cross-sectional nature of the data obviously limits the possibility to draw causal inferences. However, note that this study aimed to examine the *distinction* between burnout and engagement, both factor-analytically and in terms of the correlates of these concepts. We acknowledge that the associations between job characteristics on the one hand and burnout and engagement on the other hand have often been interpreted in causal terms (e.g., Schaufeli & Bakker, 2004), but for the purpose of the current study it is irrelevant whether these associations reflect true causal effects or that they merely represent statistical associations. The fact that all data were collected using self-report measures might have led to an inflation of the correlations among the study variables due to common method variance (Podsakoff, MacKenzie, Podsakoff & Lee, 2003; Spector, 2006). However, the magnitude of the associations between demands, resources, burnout indicators and engagement indicators varied, lending little credence to the notion that these associations would be largely due to the effect of a single underlying method factor.

Secondly, in a study on the distinctiveness of burnout and engagement it may be considered a serious limitation to measure these concepts with abbreviated scales (as was the case for engagement) and not including all dimensions of these instruments (as was the case for both engagement and burnout). On the one hand, this issue relates to the question whether in this case it is permissible to use abbreviated scales for engagement. Although the reliability of the two three-item indicators of vigor and dedication was excellent (with Cronbach's alphas of 0.88 and 0.90, respectively), using the full scales would likely have resulted in even higher reliabilities, possibly leading to slightly stronger associations with the job characteristics in this study. However, as the reliability of the three-item measures used here was already excellent, it seems implausible that using the full scales would have resulted in major changes of the conclusions of this study. Moreover, note that the items used in the current study were selected by Schaufeli et al. (2006) as being the most characteristic items for its dimensions, that is, these items tap the *core* of this concept. Whereas adding more items might result in a broader coverage of engagement, one may ask whether this would also result in a conceptually *better* and/or *more valid* measurement of the engagement dimensions; insofar as these additional items would go beyond the core of engagement, they could even be considered to merely add noise to its measurement. Thus, overall we argue that neither empirically nor conceptually there is a need to use the full engagement scale in examining its relations with burnout and work characteristics. On the other hand, this issue pertains to the question as to what "burnout" and "engagement" really involve. Specifically, is "absorption" ("efficacy") really a central element of engagement (burnout)? This issue has been addressed in several studies (e.g., (Bakker et al., 2008; Demerouti et al., 2010), concluding that whereas vigor and dedication are the two core elements of engagement, absorption is less central to this concept. In a similar vein, exhaustion and cynicism are considered the two central dimensions of burnout, with professional efficacy not being a core concept of burnout (Demerouti et al., 2010; Gonzales-Roma et al., 2006; Lee & Ashforth, 1996). Thus, the approach taken here – by focusing on the two core components of both burnout and engagement – does not seem unreasonable.

Thirdly, one may ask whether the current approach to analyzing the data is optimal for the research questions at hand. The associations among items tapping different concepts have recently been studied by fitting so-called bifactor models (Reise, 2012) to the data, in which the covariations among the items are accounted for by a single general factor that reflects the common variance among all scale items, and "group" factors that reflect additional common variance among specific clusters of items (e.g. items tapping "exhaustion/vigor" versus items tapping "dedication/cynicism"). In this vein it is possible to study relatively subtle patterns of associations among clusters of items, even if at a higher level all items are highly correlated. However, the aim of the current study was not to see whether something unique to burnout or engagement remains after taking into account that the items of these concepts largely cover the same conceptual domains, but rather to examine whether well-used measures of engagement and burnout tap *clearly* different concepts or whether in everyday life they largely measure the same underlying dimensions. The approach taken here − using confirmatory factor analysis and focusing on differences in the patterns of associations between the burnout/engagement dimensions on the one hand and work characteristics on the other − is consistent with this goal.

Finally, the current study was conducted among a relatively homogenous group of occupations, namely that of those working in police organizations. Organizations attract specific types of applicants, increasing the similarity of the personnel working in a particular organization (e.g., Ployhart & Schmitt, 2008), and it is likely that this also applies to the police organization with its strong and distinctive organizational culture and high level of public exposure (Boke & Nalla, 2009). If this is correct, due to restriction-of-range effects the results reported in this study may be underestimations of the true associations among job characteristics, burnout and engagement. To some degree this is compensated for by the large sample size of this study (i.e. even small effects will be detected) and by the fact that, due to the stratified

nature of this sample, staff holding different types of jobs were included in this study, including some 40% administrative and support staff and high-level managerial jobs (inspectors and commissioners). Thus, although this study was conducted within one particular group of occupations, there was still considerable variation among the participants in terms of the characteristics of their jobs.

It is an interesting question whether the specific nature of the sample may have influenced our finding that the distinction between the dimensions of engagement on the one hand and those of burnout on the other was not as clear as reported in previous research on this issue. Earlier work on the distinction between burnout and engagement has tended to rely on samples of white-collar workers (e.g., Gonzalez-Roma et al., 2006; Schaufeli & Bakker, 2004; Schaufeli et al., 2008; Schaufeli & Salanova, 2007) and university students (Schaufeli et al., 2002; Schaufeli & Salanova, 2007) − types of jobs (if one can speak about a "job" in the case of students) that primarily involve high mental and cognitive demands and in which the mean level of education will often have been above average. Conversely, the largest part of the current sample will have conducted tasks that to a considerable degree or even primarily involve high physical demands, and includes a relatively high proportion of low-education participants. Although we know that differences in educational level tend to affect participants' responses to questionnaire items (e.g., Costello and Roodenburg, 2015), similar evidence for response bias due to the nature of jobs is absent. Thus, it is up to future research to show whether the difference between the factor-analytic findings reported in the present study and those of earlier research are due to chance, to differences among samples or the jobs involved, or to the fact that previous research did not systematically examine all models tested in the present study.

4.3. Theoretical and practical implications

The present study extends previous research in at least three ways. First, our findings indicate that the distinction between burnout and engagement is more elusive than appeared in the early studies on this distinction as well as in studies testing the revised JD-R model (in which a main distinction was made between a health impairment process, relating job demands to health issues/burnout, and a motivational process, relating job resources to motivation/engagement). More recent research has suggested that the distinction between two separate concepts (burnout and engagement) and two processes (motivation and health impairment) may be too simple (Crawford et al., 2010). Conversely, the findings reported here suggest that things may actually be *simpler* than proposed in the JD-R model, in that the theoretical distinction between burnout and engagement was empirically not convincingly confirmed (cf. Cole et al., 2012). Of course, it cannot be denied that phenomenologically the absence of burnout does not imply the presence of engagement and vice versa (Leon et al., 2015; Schaufeli et al., 2002), but the findings obtained for the current sample suggest that the similarities of these concepts may in some cases be larger than their differences.

Second, the present study is in line with earlier doubts on the assumption that the associations between various job characteristics and burnout/engagement can be accounted for by two underlying processes, the motivation process (for the associations between job demands and burnout) and the health impairment process (for the associations between job resources and engagement). To some degree this notion has already been incorporated in recent formulations of the JD-R model that allow for interactions of demands and resources in affecting outcomes and even for different types of demands (e.g., Bakker et al., 2014). However, the main distinction between two separate processes is still maintained in these models. On the basis of the present findings one might argue that the distinction between two separate processes is perhaps not as clear-cut as suggested initially. That is, if the notion that the relationships between job demands and job resources with indicators of both burnout and engagement are largely similar is valid, it follows that the motivational and strain processes in the JD-R model may have more in common than initially suggested.

Finally, the present study indicated that the job demands and the job resources included in this study varied in their associations with the outcome variables (Table 4). In past research on the JD-R model such differences in the effects of various demand and resource variables may have remained invisible, because the job demands included in these studies were often considered indicators of a single latent "demand" factor and all resources as indicators of a single latent "resource" factor. In these studies, the focus was on what these concepts had in common, rather than on their conceptual differences. However, the deconstructivist approach taken in the present study − focusing on the separate job demands and job resources, rather than on broad amalgamates of "resources" and "demands" − showed that our demands and resources varied in the magnitude of their associations with burnout and engagement. This suggests that in order to understand the associations between demands and resources on the one hand and outcomes on the other more fully, it may be beneficial to focus on the effects of *specific* demands and resources on a study's outcomes (cf. Bakker, Van Veldhoven, & Xanthopoulou, 2010; Van Veldhoven, Taris, de Jonge, & Broersen, 2005).

From a practical point of view, the current study suggests that the differences between engagement and burnout should not be exaggerated; both concepts appear to have much in common, both in terms of their (job-related) antecedents and in terms of their measurement. For practice, this suggests that shorter questionnaires may be used to measure employees' health and wellbeing in organizations. This also means that there is no need to be overly dogmatic in devising interventions to increase employee health and well-being. Although the JD-R model prescribes that health issues should primarily be addressed by decreasing demands and that motivation is best increased by increasing resources (Bakker & Demerouti, 2007), it seems that an intervention that addresses job demands (resources) may also have beneficial effects on motivation/engagement (health/burnout). For example, the current study suggests that an intervention that promotes the growth opportunities or reduces the role uncertainty experienced in a job could boost engagement as well as mitigate burnout.

4.4. Conclusions

Summarizing, the factor analyses presented in the current study showed that the distinction between burnout and engagement is not as clear as is sometimes suggested. Moreover, the indicators of burnout and those of engagement did not show a clearly different pattern in terms of their job-related correlates (i.e. demands and resources), and these patterns of associations only partly corresponded with previous theorizing on the antecedents of burnout and engagement. We conclude that burnout and engagement are overlapping concepts and that the conceptual and empirical differences should not be overestimated. Moreover, it could be advantageous for future research to reconsider the processes linking specific demands and specific resources to outcomes, rather than to assume that these processes are the same for different demands and resources.

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