
Crossover of Burnout and Engagement in Work Teams

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This study investigates the crossover of burnout and work engagement among 2,229 Royal Dutch constabulary officers, working in one of 85 teams. The authors hypothesized that both states may transfer from teams to individual team members. The results of multilevel analyses confirm this crossover phenomenon by showing that team-level burnout and work engagement are related to individual team members' burnout (i.e., exhaustion, cynicism, and reduced professional efficacy) and work engagement (vigor, dedication, and absorption), after controlling for individual members' job demands and resources. The implications of these findings for interventions aimed at the promotion of employee well-being are discussed.

Keywords: *burnout; crossover; emotional contagion; work engagement*

Just as crossover at the workplace can cause a burnout climate in the organization, we can think of "positive contagion," whereby relaxed people create an unperturbed organization.

—Westman (2002, p. 173)

During the past two decades, several authors have used anecdotal evidence to argue that job-induced strain and burnout may transfer from one employee to another (e.g., Cherniss, 1980; Edelwich & Brodsky, 1980). Recently, more systematic studies have provided empirical evidence for this phenomenon (Bakker, Demerouti, & Schaufeli, 2003; Bakker, LeBlanc, & Schaufeli, 2005; Bakker & Schaufeli, 2000; Bakker, Schaufeli, Sixma, & Bosveld, 2001; Westman & Etzion, 1999). The present study expands this line of research by investigating the crossover of burnout and work engagement

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among a sample of more than 2,000 Royal Dutch constabulary officers, working in one of 85 teams.

The concept underpinning this study is that people do not perform their jobs in isolation. Many studies have shown the importance of team level phenomena for individual experiences and work outcomes (e.g., Devine, Clayton, Philips, Dunford, & Melner, 1999; Gully, Incalcaterra, Joshi, & Beaubien, 2002). One such team characteristic is the occupational health of its members. What happens to individual employees when several of their team members suffer from burnout? By comparison, what happens in the situation where most team members are highly engaged and enthusiastic about their work? Do these experiences at the team level affect individual team members? We will investigate whether burnout and work engagement in teams of constabulary officers may influence individual officers' experiences of burnout and engagement, after controlling for the influence of their work conditions. In addition, because we expect that team burnout may influence individual employees' levels of engagement and vice versa, we will examine the crossover of burnout (engagement) while controlling for engagement (burnout).

The population of Royal Dutch constabulary officers has grown rapidly during the past 5 years, mainly due to the adoption of new enforcement strategies and civilian tasks. Nowadays, more than 90% of the work is comparable to civilian policing tasks, such as border control, crime investigations, traffic control, and protection of civilian persons and objects. In addition, a new and demanding task includes dealing with illegal immigrants, their detention and facilitation of their return to home countries. As a rapidly growing and changing organization, the management felt a need to measure potential job demands, resources, and employee well-being to optimize the work environment.

Burnout and Work Engagement

Burnout is a work-related stress reaction that can be found among employees in a wide variety of occupations, including constabulary officers (Bakker, Demerouti, & Schaufeli, 2002; Schaufeli & Enzmann, 1998). Most contemporary researchers agree that the syndrome is characterized by three related, but empirically distinct, elements: namely exhaustion, cynicism, and reduced professional efficacy (Leiter & Schaufeli, 1996; Maslach, Jackson, & Leiter, 1996; Maslach & Leiter, 1997). Feelings of exhaustion or energy depletion are generally considered a core symptom of the burnout syndrome (e.g., Shirom, 1989). Cynicism refers to the development of negative, cynical

attitudes toward work and the people with whom one works (e.g., clients and colleagues). The third dimension of burnout, reduced professional efficacy refers to the belief that one is no longer effective in fulfilling one's job responsibilities. Thus, burned-out individuals suffer from feelings of fatigue, behave indifferently toward their work and clients, and they believe that their performance has suffered accordingly.

By contrast, work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, Gonzalez Roma, & Bakker, 2002b). Vigor refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties. Dedication refers to a sense of significance, enthusiasm, inspiration, pride, and challenge. Vigor and dedication are the direct positive opposites of exhaustion and cynicism, respectively. The third dimension of engagement is called absorption, which was found to be another constituting element of engagement in 30 in-depth interviews (Schaufeli et al., 2001). Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work. Thus, engaged employees feel vigorous and strong, are enthusiastic about their work, and they often get immersed in their work activities.

Crossover of Collective Burnout and Work Engagement

Shared feelings of burnout or work engagement at the team level can be conceptualized as examples of "collective mood." According to Totterdell (2000), there are two obvious ways a team could gain a collective mood. First, team members could respond similarly to shared events and therefore end up feeling the same way; either burned out or feeling engaged with their work. Westman (2002) has argued that such shared events should be taken as "third variables" representing spurious causes of what seems to be crossover. When it comes to burnout, particularly the combination of high job demands and lack of job resources represents such shared events that may cause burnout (e.g., Bakker, Demerouti, De Boer, & Schaufeli, 2003; Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2000, 2001). For example, Demerouti et al. (2001) showed that confrontation with high job demands (e.g., high workload, emotional demands, role conflicts) and a lack of resources (e.g., autonomy, social support, feedback) increases employees' risk of burnout. This implies that high demands and low resources generally characterize

teams with a high concentration of burnout, and that a rigorous test of burnout crossover involves controlling for employees' work conditions.

Work engagement seems to be particularly related to the resources available in an organization. Job resources refer to those physical, psychological, social, or organizational aspects of the job that are either/or: (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, (c) stimulate personal growth and development. Job resources have motivational potential because they make employees' work meaningful, hold them responsible for work processes and outcomes, and provide them with information about the actual results of their work activities (cf. Bakker et al., 2003; Hackman & Oldham, 1980). We could only locate one study that directly examined the antecedents of work engagement. Schaufeli and Bakker (2004) used structural equation modeling to analyze data simultaneously from four independent occupational groups (total $N = 1,698$). Results confirmed their hypothesis indicating that job resources (in this study: performance feedback, social support from colleagues, and supervisor support) were the most important predictors of work engagement among employees working for an insurance company, an occupational health and safety service, a pension fund company, and a home-care institution. This suggests that highly engaged work teams generally have a sufficient amount of job resources available. These resources may represent Totterdell's (2000) shared events, and therefore, a rigorous test of the crossover of work engagement implies controlling for employees' job resources.

Another way a team could gain a collective mood is that team members affect each other's moods such that their moods converge (Totterdell, 2000). Theoretical and empirical work on the transmission of emotions can be used to illustrate how burnout may be socially induced. Buunk and Schaufeli (1993) have suggested that colleagues may act as role models, whose symptoms are imitated through a process of "emotional contagion." That is, employees may perceive symptoms of burnout in their colleagues and automatically take on these symptoms. This process is similar to what has been described as *emotional contagion*: "The tendency to automatically mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person and, consequently, to converge emotionally" (Hatfield, Cacioppo, & Rapson, 1994, p. 5). The emphasis in this definition is clearly on a *nonconscious* process. Research has indeed shown that in conversations, people automatically mimic the facial expressions, voices, postures, and behaviors of others (e.g., Bavelas, Black, Lemery, & Mullett, 1987; Bernieri, Reznick, & Rosenthal, 1988), and that people's conscious experience may be shaped by such facial feedback

(Laird, 1984; Siegman & Reynolds, 1982). The exhaustion dimension of burnout seems to be the most likely candidate for unconscious contagion in work teams, because fatigue is often expressed in a visible way (through facial expressions, postures, movements).

There is, however, yet another way in which people may "catch" emotions, attitudes, and behaviors of others, also described as empathic crossover (Westman, 2001, 2002). Transference may also occur via a *conscious* cognitive process by "tuning in" to the emotions of others. This will be the case when a person tries to imagine how he or she would feel in the position of another, and, as a consequence, "experiences" the same feelings. Thus, the realization that another person is happy or sad may trigger memories of the times we have felt the same way, and these memories may spark similar emotions (see Hsee, Hatfield, Carlson, & Chemtob, 1990). At the workplace, there are several conditions and circumstances that may facilitate such a process of consciously tuning in to the emotions of colleagues.

The attitudinal components of burnout, namely cynicism and reduced professional efficacy, seem the most likely candidates for conscious crossover. Indeed, Bakker and Schaufeli (2000) found that teachers who frequently talked with their burned-out colleagues about problematic students had the highest probability of catching the negative attitudes expressed by their colleagues. In repeatedly trying to understand the problems their colleagues were facing, teachers presumably had to "tune in" to the negative attitudes expressed by their colleagues (about themselves and about the students). This creates a condition under which central or *systematic* processing (instead of peripheral or heuristic processing) of information is likely to occur (Petty & Cacioppo, 1986). The result will be negative attitude change, particularly when burned-out colleagues have strong arguments to bolster their frustration and uncaring attitudes.

Crossover of burnout is most likely when a (relatively) high number of team members suffer from symptoms of burnout. In the present study, the team level of burnout is therefore defined as the relative number of team members who may be considered as burned out. This leads to the first hypothesis:

Hypothesis 1: Team level burnout (exhaustion, cynicism, and lack of professional efficacy) is positively related to individual team members' level of burnout, after controlling for the impact of individual job demands and resources.

Although research suggests that negative emotions are more easily transferred than positive emotions (see Hatfield et al., 1994, for an overview), it is conceivable that work engagement may crossover as well. Schaufeli et al.

(2001) interviewed 30 employees, and found that engaged workers are generally optimistic, take personal initiative and are proud of their work. Several interviewees indicated that they were proactive in seeking skill variety. Moreover, because of their positive attitudes and proactive behaviors, they created their own rewards and positive feedback in terms of appreciation, support, and admiration. Engaged employees are highly dedicated to their work and the organization and inclined to help their colleagues if needed (organizational citizenship behavior; Organ, 1994). This creates a positive spiral of success that is communicated to others in the work environment. Thus, similarly to the unconscious transference of the exhaustion dimension of burnout, we believe that the vigor and absorption dimensions of work engagement may cross over from the team to individuals within the team. The third engagement dimension, dedication, is most likely to operate in a similar way to the cynicism dimension of burnout. In other words, we expect that high levels of dedication at the team level will influence individual levels of dedication in a conscious way—for example when conversations with enthusiastic team members make individuals focus on positive aspects of interactions with their recipients. This leads to the second hypothesis:

Hypothesis 2: Team level engagement (vigor, dedication, and absorption) is positively related to individual team members' level of engagement, after controlling for the impact of job demands and resources.

Collective Burnout Influences Individual Engagement and Vice Versa

There are two different schools of thought regarding the *relationship* between burnout and work engagement. Maslach and Leiter (1997) assume that burnout and engagement are two opposite poles of one continuum. They rephrased burnout as an erosion of engagement with the job, whereby energy turns into exhaustion, involvement turns into cynicism, and efficacy turns into ineffectiveness. In their view, engagement is characterized by energy, involvement, and professional efficacy, which are the direct opposites of the three burnout dimensions. The second school of thought defines and operationalizes work engagement in its own right (Schaufeli & Bakker, 2001, 2004). Instead of being mutually exclusive states, burnout and engagement are considered independent states that are, by their very nature, negatively, but not perfectly related. Recent studies have indeed confirmed this latter view (Schaufeli, Martinez, Marques Pinto, Salanova, & Bakker, 2002a; Schaufeli et al., 2002b). This implies that the evidence for crossover

of (low levels of) burnout cannot be taken as evidence for the crossover of work engagement. This validates our choice to examine the crossover of both states and to investigate the extent to which team-level burnout (work engagement) influences individual levels of work engagement (burnout).

It is clear that most teams will consist of members who feel burned out, and those who are highly engaged in their work. Therefore, interesting questions are how collective burnout influences individual engagement, and how collective engagement influences individual burnout. It is conceivable that the influence of collective burnout on individual burnout is reduced when the influence of collective engagement is controlled for, because enthusiastic team members may counteract the negative attitudes of their burned-out colleagues. In a similar way, the influence of collective work engagement on individual engagement may be reduced by the negative feelings, attitudes, and behaviors communicated by burned-out team members. This leads to our third and last hypothesis, which is divided in two subhypotheses:

Hypothesis 3a: Team level engagement is negatively related to individual team members' level of burnout, after controlling for the impact of team level burnout, and individual job demands and resources.

Hypothesis 3b: Team level burnout is negatively related to individual team members' level of engagement, after controlling for the impact of team level engagement, and individual job demands and resources.

Method

Procedure and Participants

This study was part of a survey on work conditions and occupational health among all employees (both civilian and military) working for the Royal Dutch Constabulary Officers organization (in Dutch: Koninklijke Marechaussee). This is a Dutch police organization with a military status; it includes more than 5,000 employees in total. By means of qualitative interviews, the most significant work conditions were identified and subsequently included in a paper-and-pencil questionnaire. Questionnaires were sent to the private addresses of all participants, with a prepaid return envelope. Anonymity was guaranteed, and an information campaign supported the study. The response was 3,042 questionnaires (response rate = 61%). After deleting participants with missing values on the research variables, the data of 2,229 constabulary officers (93% men and 7% women) from 85 teams with a mean size of 26 ($SD = 15.2$) officers per team were used (the

effective sample response rate is 45%). Mean age of the participants was 36.2 years ($SD = 9.5$). Mean organizational tenure was 14 years ($SD = 10.3$), and participants completed on average 9.4 years of education ($SD = 1.6$). Additional analyses revealed that there were no differences between the final sample and the sample that responded in terms of educational level, organizational tenure, and age. However, there was a difference between the final sample and the sample that responded: in the final sample 7% of the sample is female, whereas 13% of the sample that responded was female ($p < .01$).

Measures

Job demands. Four job demands were included in the questionnaire, namely work pressure, physical demands, emotional demands, and performance expectation demands. Work pressure was based on a Dutch version (Furda, 1995) of Karasek's (1985) job content instrument. The scale includes three items that refer to quantitative, demanding aspects of the job (e.g., time pressure, working hard). A sample item is as follows: "Do you have to work very fast?" Items are scored on a 5-point scale, ranging from (1) *never* to (5) *always*. Unless otherwise indicated, all following demands and resources used the same response categories. Internal consistency of the work pressure scale was high: Cronbach's alpha = .88. Physical demands was measured with a scale developed by Bakker et al. (2003). Participants were asked to indicate how demanding they thought each of seven situations was (1 = *barely demanding*, 5 = *extremely demanding*). An example item is as follows: "Working in a bending position," Cronbach's alpha = .80. Emotional demands was based on a scale developed by Van Veldhoven and Meijman (1994) and included five items. An example item is as follows: "Do you face emotionally charged situations in your work?" Cronbach's alpha = .71. Finally, expectation demands on participants were assessed with three items, including "In your work, are you confronted with tasks that are too complex, given your level of education?" Cronbach's alpha = .65.

Job resources. Seven job resources were included in the questionnaire. Autonomy was assessed with a three-item scale, based on Karasek's (1985) job content instrument. A sample item is, "I can decide myself how I execute my work," Cronbach's alpha = .82. Opportunities for professional development were measured with three items of Bakker et al.'s (2003) scale. An example item is as follows: "My work offers me the opportunity to learn new things" (1 = *totally disagree*, 5 = *totally agree*), Cronbach's alpha = .80.

Supervisor support was assessed with seven items, using a Dutch adaptation (Le Blanc, 1994) of Graen and Uhl-Bien's (1991) Leader-Member Exchange scale (e.g., "My supervisor uses his/her influence to help me solve my problems at work," Cronbach's $\alpha = .94$). Social support from colleagues was measured with the three-item scale developed by Bakker et al. (2003). An example item is as follows: "Can you ask your colleagues for help if necessary?" Cronbach's $\alpha = .79$. Team spirit was measured with a three-item scale inspired by Chang and Bordia's (2001) work on group cohesion. An example item is, "In my team, the discipline and work norms suffer from a lack of team spirit" (reverse coded), Cronbach's $\alpha = .79$. Finally, two job resources related to pay and benefits were included in the questionnaire. Financial rewards were measured with a three-item scale developed by Van Veldhoven and Meijman (1994), including "I receive sufficient pay for the work that I do" (1 = *totally disagree*, 5 = *totally agree*), Cronbach's $\alpha = .76$. Satisfaction with additional benefits was assessed with four items, including "My organization offers good fringe benefits" (1 = *totally disagree*, 5 = *totally agree*), Cronbach's $\alpha = .72$.

Burnout was assessed using the Maslach Burnout Inventory-General Survey (MBI-GS) (Schaufeli, Leiter, Maslach, & Jackson, 1996). The instrument consists of three subscales: Tapping, Exhaustion, Cynicism, and (reduced) Professional Efficacy. *Exhaustion* is measured with five items, including "I feel burned out from my work," and "I feel tired when I get up in the morning and have to face another day on the job" (Cronbach's $\alpha = .86$). *Cynicism* reflects indifference or a distant attitude toward work and is also measured with five items, such as "I have become more cynical about whether my work contributes anything" (Cronbach's $\alpha = .81$). Finally, *Professional Efficacy* encompasses both social and nonsocial accomplishments at work and is assessed with six items. An example is, "I feel I am making an effective contribution to what this organization does" (Cronbach's $\alpha = .71$). Participants were asked to indicate the extent to which they agreed with each statement using a 7-point rating scale (0 = *never*, 6 = *every day*). High scores on exhaustion and cynicism and low scores on professional efficacy are indicative for burnout.

Work engagement. The engagement scales have been developed by Schaufeli and Bakker (2003) and have proven to be reliable in several studies (Schaufeli et al., 2002a, 2002b). An exemplary item of the 6-item *Vigor* scale is "At my job, I feel bursting with energy" ($\alpha = .86$). An example of the 5-item *Dedication* scale is "My job inspires me" ($\alpha = .93$). An example item of the 6-item *Absorption* scale is "Time flies when I am

working” ($\alpha = .82$). The items of all three engagement scales used a 7-point response format (0 = *never*, 6 = *every day*).

Team level burnout and engagement. To assess team level burnout, we first computed whether the participants scored relatively low, medium, or high on each of the three burnout dimensions (Schaufeli et al., 1996). After that, based on Schaufeli and Van Dierendonck’s (2000) criteria for the Dutch workforce, employees were categorized as burned out when they scored (a) high on exhaustion *and* (b) either high on cynicism, or low on professional efficacy. In the analyses, the percentage of burned-out employees per team was used. To compute work engagement at the team level, a similar procedure was followed using the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2003). Employees were considered as engaged if they scored high on *each* of the three work engagement dimensions (vigor, dedication, and absorption), using Schaufeli and Bakker’s criteria for the Dutch workforce. In the analyses, the percentage of engaged employees per team was used. Among all 2,229 constabulary officers, 25% were classified high in burnout and 22% as high in engagement.¹

Background variables. Gender (male = 0, female = 1), organizational tenure (in years), educational level (in years of education completed), team size, and the gender ratio (percentage females) per team were included in the analyses.

Data Analyses

Because the team-level scores of burnout and engagement were computed as measures at the aggregate level, we examined whether this necessitated multilevel analyses, because ignoring nested structures of data by using ordinary least square regression—treating the data as if all observations are independent—may produce unreliable standard errors and result in misspecification of models (Hox, 2002; Snijders & Bosker, 1999). Therefore, we tested the null hypothesis that there are no group differences, that is, the hypothesis that the true between-group variance is zero (Snijders & Bosker, 1999). F-values for group effects derived from ANOVAs for all six dependent variables separately ranged from 1.94 to 4.79 ($ps < .01$) confirming the appropriateness of using multilevel analyses. Hence, we conducted multilevel analyses with the HLM software package with all the burnout and engagement dimensions as the dependent variables. In each of these analyses, we included (a) team size, (b) team level burnout, and (c) team-level engagement

as aggregated variables, and in each of these analyses we controlled for background variables, individual job demands, and individual job resources.

Results

Descriptive Statistics

Table 1 presents the means, standard deviations, and correlation coefficients for all variables included in the study. As can be seen from this table, the correlations between the three burnout scales are low to moderately high, whereas the correlations between the three engagement scales are high. Furthermore, burnout at the team level is primarily related to the individual-level burnout dimensions, whereas team-level engagement is primarily related to the individual-level engagement dimensions. Of the four job demands, work pressure and physical demands are related to each of the burnout and engagement scales, whereas the other demands (emotional demands and overcharge) are primarily related to the burnout dimensions. The job resources are related to all burnout and engagement scales, with one exception (financial rewards).

Testing the Crossover of Burnout and Engagement

According to Hypothesis 1, team-level burnout is positively related to individual team members' level of burnout (exhaustion, cynicism, and reduced professional efficacy), after controlling for the impact of job demands and resources. The results of the multilevel analysis for each of the three burnout dimensions separately are shown in Table 2.

Model 1 shows the results of multilevel analysis for the intercept-only model, the model that contains no explanatory variables (Hox, 2002). The intraclass correlation coefficient, as an indication of the variance explained by the grouping structure in the population, was computed from the variance of the individual level, symbolized by σ_e^2 , and the variance of the team-level residual errors, symbolized as $\sigma_{\text{team level}}^2$, by using the following formula (Hox, 2002):

$$\sigma_{\text{team level}}^2 / (\sigma_{\text{team level}}^2 + \sigma_e^2).$$

The intraclass coefficients for each of the burnout dimensions ranged from .03 to .06. This means that 3% to 6% of the variance in the dependent variables is explained by the grouping structure in the population.

(text continues on p. 479)

Table 1
Means, Standard Deviations, and Correlations for All Variables, $n = 2,229$

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Emotional exhaustion	1.56	1.12																						
2	Cynicism	1.85	1.25	.42**																					
3	Reduced efficacy	1.88	0.90	.19**	.51**																				
4	Dedication	3.67	1.35	-.20**	-.69**	-.72**																			
5	Vigor	4.05	1.07	-.34**	-.55**	-.66**	.78**																		
6	Absorption	3.35	1.16	-.10**	-.50**	-.60**	.82**	.74**																	
7	Gender	—	0.26	-.02	.02	.13**	-.10**	-.11**	-.07**																
8	Organizational tenure	14.00	10.30	.12**	-.09**	-.13**	.19**	.08**	.18**	-.20**															
9	Education	9.37	1.64	-.01	.03	.00	-.01	.06*	.00	.10**	-.19**														
10	Work pressure	2.82	1.01	-.29**	-.19**	-.29**	.40**	.26**	.38**	-.08**	.38**	.05*													
11	Physical demands	2.23	1.21	.13**	.26**	.15**	-.23**	-.15**	-.19**	.00	-.27**	-.04	-.08**												
12	Emotional demands	2.17	0.63	.39**	.24**	-.02	-.01	-.04	.05*	-.04	.11**	.00	.43**	.21**											
13	Expectation demands	1.74	0.65	.42**	.19**	.07**	-.03	-.10**	.02	-.02	.18**	-.04*	.41**	.08**	.43**										
14	Autonomy	3.31	0.86	-.09**	-.35**	-.40**	.47**	.37**	.40**	-.06**	.43**	-.01	.33**	-.30**	-.06**	.00									
15	Opportunities for development	3.06	0.92	-.15**	-.48**	-.41**	.55**	.38**	.42**	-.05*	.19**	.02	.23**	-.27**	-.12**	-.07**	.42**								
16	Supervisor support	3.16	1.03	-.17**	-.31**	-.30**	.33**	.29**	.26**	-.01	-.09**	.01	.02	-.14**	-.16**	-.20**	.24**	.35**							

(continued)

Table 1 (continued)

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
17 Coworker support	3.97	0.85	-0.26**	-0.29**	-0.27**	.27**	.28**	.19**	-.01	-.08**	-.02	-.07**	-.06**	-.22**	-.26**	.18**	.25**	.41**							
18 Team spirit	4.41	0.66	-0.26**	-.31**	-.17**	.22**	.18**	.14**	-.04*	.07**	-.02	-.01	-.19**	-.28**	-.23**	.19**	.24**	.27**	.39**						
19 Financial rewards	2.83	0.83	-.15**	-.03	.03	-.04*	-.03	-.01	.13**	-.12**	-.05*	-.25**	-.17**	-.22**	-.18**	.00	.15**	.10**	.05*	.05*					
20 Satisfaction additional benefits	3.06	0.97	-.14**	-.18**	-.09**	.11**	.06**	.12**	.12**	-.19**	.03	-.15**	-.23**	-.17**	-.12**	.02	.27**	.17**	.09**	.04	.50**				
21 Burnout team level	0.25	0.43	.63**	.54**	.56**	-.37**	-.40**	-.26**	.00	.00	-.01	.06**	.13**	.29**	.28**	-.19**	-.25**	-.20**	-.26**	-.10**	-.11**				
22 Engagement team level	0.22	0.42	-.14**	-.39**	-.47**	.63**	.59**	.67**	-.06**	.14**	.00	.23**	-.15**	-.02	-.06**	.27**	.31**	.22**	.18**	.12**	-.02	.09**	-.23**		
23 Team size	26.0	15.20	.04	.04*	.02	-.09**	-.06**	-.08**	.02	-.33**	.01	-.08**	.12**	.03	-.07**	-.24**	-.02	.08**	.07**	-.03	.06**	.15**	.04*	-.03	
24 Gender ratio	0.07	0.06	-.02	-.04	-.03	-.02	-.01	-.01	.23**	-.13**	.10**	.02	-.07**	.04*	.01	-.06**	.02	.03	.01	-.02	.07**	.13**	-.03	-.02	.10**

* $p < .05$. ** $p < .01$.

Table 2
Linear Mixed Models for the Three Burnout Dimensions, $n = 2,229$

	Emotional Exhaustion			Cynicism			Reduced Professional Efficacy					
	Model 1 (intercept only)		Model 2	Model 1 (intercept only)		Model 2	Model 1 (Intercept only)		Model 2			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Fixed part												
Intercept	1.549**	.034	0.548*	.253	1.843**	.043	2.919**	.285	1.878**	.030	4.170**	.220
Gender			-0.050	.067			0.021	.075			-0.320**	.058
Organizational tenure			0.005*	.002			0.007**	.003			0.003	.002
Education			-0.000	.011			0.048**	.012			0.004	.009
Job demands												
Work pressure			0.198**	.023			-0.235**	.026			-0.116**	.020
Physical demands			0.029	.016			0.073**	.018			0.000	.14
Emotional demands			0.133**	.034			0.230**	.038			-0.155**	.029
Expectation demands			0.220**	.031			0.112**	.034			0.074**	.027
Job resources												
Autonomy			-0.031	.025			-0.087**	.028			-0.177**	.022
Opportunities for development			0.002	.022			-0.283**	.025			-0.122**	.020
Supervisor support			0.019	.019			-0.053*	.021			-0.074**	.017
Coworker social support			-0.051*	.023			-0.038	.026			-0.100**	.020

(continued)

Table 2
Linear Mixed Models for the Three Burnout Dimensions, $n = 2,229$

	Emotional Exhaustion				Cynicism				Reduced Professional Efficacy			
	Model 1 (intercept only)		Model 2		Model 1 (intercept only)		Model 2		Model 1 (Intercept only)		Model 2	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Team spirit			-0.088**	.029			-0.138**	.032			0.022	.025
Financial rewards			-0.013	.024			0.135**	.027			0.046*	.021
Satisfactory additional benefits			-0.011	.021			-0.100**	.024			-0.032	.019
Team level												
Team size			0.002	.001			0.001	.002			-0.001	.001
Burnout at team level			1.358**	.043			1.043**	.048			0.467**	.037
Engagement at team level			-0.116**	.044			-0.422**	.049			-0.575**	.038
Gender ratio			-0.152				-0.332				-0.608*	
Random part												
σ^2_{error}	1.204**	.037	0.599**	.018	1.479**	.045	0.744**	.023	0.761**	.023	0.455**	.014
$\sigma^2_{team\ level}$	0.090**	.024	0.011*	.005	0.090**	.024	0.024**	.009	0.042**	.011	0.006	.004
Intraclass correlation			0.03				0.06				0.05	
-2 Log Likelihood	6,793.668		5,196.605		7,274.785		5,693.886		5,789.584		4,577.586	

* $p < .05$. ** $p < .01$.

Furthermore, Table 2 displays the -2 Log Likelihoods or deviances for both models 1 and 2; these indicate how well the models fit to the data. In general, models with lower values on the -2 Log Likelihood fit better to the data than models with a higher -2 Log Likelihood (Hox, 2002). For each of the dependent variables in Table 2, model 2 fits better than model 1. Consistent with Hypothesis 1, team-level burnout is positively associated with each of the three burnout dimensions: Exhaustion ($b = 1.358, p < .01$), Cynicism ($b = 1.043, p < .01$), and reduced Professional Efficacy ($b = .467, p < .01$). Taken together, these findings clearly support Hypothesis 1: Team-level burnout increases individual team members' levels of burnout, also after controlling for the influence of the work environment (job demands and resources), and the influence of work engagement at the team level.

According to Hypothesis 2, team-level engagement (vigor, dedication, and absorption) is positively related to individual team members' level of engagement, also after controlling for the impact of job demands and resources. Table 3 shows that the intraclass coefficients for each of the engagement dimensions range from .05 to .21. Thus 5% to 21% of the variance in the engagement dimensions is explained by the grouping structure in the population.

The -2 Log Likelihoods, or deviances, for the models 2 are lower than for the models 1, indicating that the models 2 fit better to the data than the models 1. Specifically, Table 3 shows that team-level engagement is positively related to each of the engagement dimensions: Dedication ($b = 1.300, p < .01$), Vigor ($b = 1.085, p < .01$), and Absorption ($b = 1.446, p < .01$). Taken together, these findings clearly support Hypothesis 2: Team-level engagement is related to individual team members' levels of engagement, also after controlling for the influence of the work environment (job demands and resources).

According to Hypothesis 3a, team-level work engagement is negatively related to individual team members' level of burnout, after controlling for the impact of team-level burnout, and individual job demands and resources. Support for this hypothesis is found in the lower part of Table 2. Team-level engagement appears to be negatively associated with all three of the burnout dimensions: Exhaustion ($b = -.116, p < .01$), Cynicism ($b = -.422, p < .01$), and reduced Professional Efficacy ($b = -.575, p < .01$).

According to Hypothesis 3b, team-level burnout is negatively related to individual team members' level of work engagement, after controlling for the impact of team-level engagement, and individual job demands and resources. Support for this hypothesis is found in the lower part of Table 3.

Table 3
Linear Mixed Models for the Three Work Engagement Dimensions, $n = 2,229$

	Dedication				Vigor				Absorption			
	Model 1 (intercept only)		Model 2		Model 1 (intercept only)		Model 2		Model 1 (intercept only)		Model 2	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Fixed part												
Intercept	3.690**	.058	0.686**	.261	4.065**	.036	2.052**	.243	3.368**	.045	1.081**	.248
Gender			0.168*	.069			0.327**	.064			0.067	.066
Organizational tenure			-0.007**	.002			-0.010**	.002			-0.003	.002
Education			-0.024*	.011			0.022*	.010			-0.010	.010
Job demands												
Work pressure			0.269**	.024			0.130**	.022			0.210**	.023
Physical demands			-0.039*	.016			-0.004	.015			-0.029	.016
Emotional demands			0.048	.035			0.077*	.032			0.091**	.033
Overcharge efforts			-0.012	.032			-0.065*	.030			0.027	.030
Job resources												
Autonomy			0.207**	.026			0.157**	.024			0.140**	.024
Opportunities			0.350**	.023			0.107**	.022			0.141**	.022
for development												
Supervisor support			0.090**	.020			0.063**	.018			0.058**	.019
Coworker social support			0.084**	.024			0.109**	.022			0.048*	.023

Team spirit	0.028	.030	-0.024	.028	-0.004	.028
Financial rewards	-0.093**	.024	-0.032	.023	-0.003	.023
Satisfactory additional benefits	0.036*	.022	-0.027	.021	0.053*	.021
Team level						
Team size	-0.002	.001	-0.002	.001	-0.002	.001
Engagement at team level	1.300**	.045	1.085**	.042	1.446**	.043
Burnout at team level	-0.547**	.044	-0.585**	.041	-0.249**	.042
Gender ratio	-0.224		0.068		-0.096	
Random part						
σ^2_{error}	1.596**	.049	1.068**	.033	1.211**	.037
$\sigma^2_{\text{team level}}$	0.203**	.041	0.063**	.016	0.118**	.026
Intraclass correlation		0.21		0.05		0.09
-2 Log Likelihood	7,484.950	5,315.462	6,547.045	5,014.243	6,853.781	5,112.515

* $p < .05$. ** $p < .01$.

Team-level burnout appears to be negatively related to each of the engagement dimensions: Dedication ($b = -.547, p < .01$), Vigor ($b = -.585, p < .01$), and Absorption ($b = -.249, p < .01$).

Discussion

The results of multilevel analyses supported the proposition that team-level burnout and work engagement have unique effects on individual members' experiences of burnout and engagement. Thus, constabulary officers who worked in teams that were characterized by a high prevalence of burnout developed feelings of exhaustion and negative attitudes toward their work (cynicism) and themselves (reduced professional efficacy) (cf. Hypothesis 1). These findings are consistent with previous organizational studies on the crossover of job burnout (Bakker, Demerouti, & Schaufeli, 2003; Bakker & Schaufeli, 2000; Westman & Etzion, 1999), and also with the social psychological perspective of Buunk and Schaufeli (1993) who argued that "burnout develops primarily in a social context, and that to understand the development and persistence of burnout, attention has to be paid to the way individuals perceive, interpret, and construct the behaviors of others at work" (pp. 52-53).

Moreover, our results supplement the traditional view that the root cause of burnout lies in the demanding and emotionally charged relationships with recipients by suggesting that co-workers also play an important role in the development of burnout. Burnout symptoms expressed by colleagues may transfer to individual employees when they socialize with one another on the job or in informal meetings. For example, constabulary officers who are repeatedly exposed to cynical remarks about civilians made by their colleagues may develop negative attitudes when these remarks remind them of the times that their own recipients were unappreciative of their services (Bakker et al., 2005).

By contrast, those who worked in highly engaged teams reported higher levels of vigor, dedication, and absorption that were independent of the work conditions (cf. Hypothesis 2). These findings expand previous research by showing that the presumed antipode of burnout, work engagement, may also crossover within work teams. Apparently, engaged workers communicated their optimism, positive attitudes, and pro-active behaviors to their colleagues, and created a positive team climate. The interactions between team members therefore facilitated feelings of energy and enthusiasm in individual members; independent of the demands and resources

they were exposed to. Taken together, our study expands previous crossover research in two important ways. First, previous research restricted itself mainly to investigating the crossover of *unwell-being* (e.g., depression, burnout, and anxiety). Our study provides evidence for the crossover of burnout *and* work engagement. Second, the majority of previous crossover studies focused on dyads of (working) couples (see Westman, 2001, 2002, for overviews). Our research shows that crossover may occur in work teams as well, even though not all team members need to interact frequently, and despite the fact that teams may differ in size.

Interestingly, results showed that even after controlling for the influence of team-level burnout as well as individual job demands and resources, team-level engagement still makes an independent contribution to explaining variance in individual team members' burnout (cf. Hypothesis 3a). This suggests that team engagement (vigor, dedication, and absorption) may partly counter the experience of burnout symptoms. In a similar way, the results indicate that team-level burnout had an independent relationship with individual work engagement, also after controlling for team-level engagement, job demands, and resources (cf. Hypothesis 3b). This suggests that burned-out employees may partly undermine their team members' enthusiasm, feelings of energy, and immersion in their work. Interestingly, the intraclass coefficients for the three burnout dimensions were lower than those for the three engagement dimensions. This indicates that work engagement among constabulary officers is a more prevalent group phenomenon than the experience of burnout, with positive consequences for the team members.

With the introduction of multilevel modeling it has become possible to demonstrate the nested structures of data. In the present study, we were able to show the association of team-level phenomena with individual-level outcomes. In this way, the current findings expand the results of previous research (e.g., Golembiewski, 1996) showing that burnout "concentrates" in certain groups, by demonstrating this also applies to work engagement. The problem with these earlier studies was that they did not rule out the alternative hypothesis that burnout levels in some groups can be relatively high because of unfavorable work conditions (see also Bakker, Demerouti, & Schaufeli, 2003). The findings from our multilevel analysis, indicating that team-level burnout and work engagement make a unique contribution to explaining variance in individual officers' well-being (after controlling for the impact of several relevant job demands and resources), rules out this "third variable" explanation (see also Westman, 2002).

Nevertheless, consistent with the Job Demands–Resources model (Bakker, Demerouti, De Boer, et al., 2003; Demerouti et al., 2001), job demands and resources were also significant predictors of burnout and work engagement. In the current study, we included those work conditions that turned out to be most relevant for constabulary officers on the basis of interviews preceding the study. Job demands, such as emotional overload and performance expectation demands are thought to be more powerful predictors of burnout, whereas job resources are thought to be more important predictors of the three engagement components (vigor, dedication, and absorption) (cf. Schaufeli & Bakker, 2004). Indeed, our findings indicate that burnout and engagement have (partly) different predictors. Interestingly, work pressure was *positively* related to each of the three engagement dimensions (and negatively related to cynicism and reduced professional efficacy). A possible explanation of this observation is the nature of Royal Constabulary officers' work. A high level of routine and a low work pressure characterize many of their tasks, such as surveillance and protection of objects and persons. The findings thus suggest that employees may need certain challenges to experience work engagement.

Conclusion

Previous research has identified a variety of individual and organizational consequences of burnout, including decreased job satisfaction (e.g., Wolpin, Burke, & Greenglass, 1991), reduced emotional and physical well-being (e.g., Burke & Greenglass, 1995; Kahill, 1988), absenteeism (e.g., Firth & Britton, 1989), and job turnover (e.g., Jackson, Schwab, & Schuler, 1986). Thus, burnout has been shown to have important dysfunctional ramifications, implying substantial costs for both individuals and organizations. By contrast, work engagement seems to facilitate employee retention (Schaufeli & Bakker, 2004), organizational citizenship behaviors (Bakker, Demerouti, & Verbeke, 2004), and job performance (Harter, Schmidt, & Hayes, 2002; Salanova, Agut, & Peiró, 2005). The present study shows that burnout and work engagement are not limited to individuals but may be important to whole teams and organizations. Thus, the current results emphasize the potential benefits of social-psychological interventions at the organizational level. Future studies should investigate the value of interventions that focus on leadership style, team atmosphere, coherence, and interpersonal dynamics in work teams (Sonnentag & Brodbeck, 1994), for preventing burnout and facilitating work engagement.

The practical implications for human resources management of this study are threefold. First, through the process of allocating members to teams, crossover of burnout may be reduced and crossover of work engagement stimulated. Therefore, the monitoring of levels of burnout and engagement seems important; supervisors may be trained to observe the signs of these phenomena and personnel departments may assist in periodic monitoring. It would be interesting to test the hypothesis that including new, engaged members in a team is a better strategy than replacing burned-out members. Completely renewing and changing teams is most probably an intervention that is only necessary when team morale has disintegrated, and destructive working attitudes and conflicts have escalated into corruption and other unproductive behaviors. Second, job design is of major importance for occupational health. Often, job demands are inevitable but should be considered carefully in designing tasks, jobs, and teams. The current findings suggest that organizations should strive to find the right balance between job demands and job resources, including autonomy and opportunities for professional development. Particular attention needs to be paid to the adequacy of individual support structures provided by both supervisors and peers.

Finally, what can be done to prevent burnout contagion in teams and to facilitate the transfer of engagement? The promotion of work engagement in teams seems vital for the management of team interactions. Team members and particularly team leaders, should focus on sharing positive experiences and limiting the prolonged exchange of cynical and negative information in conversations, which is often the form of expression used by burned-out team members. This does not imply the avoidance of discussing problems or frustrations, but it means that energy and ideas from team members should be used to solve problems and foster a sense of accomplishment. Managing these interactions is not limited to group discussions, however. Paying attention to the (frequently unconscious) expression of engagement, as well as burnout, in the work place, through the appropriate use of signs, symbols, clothing, and behavior, may be expected to stimulate an engaged working environment.

Note

1. It should be noted that team level burnout and team level engagement were assessed independently, using two different and validated measurement instruments. Team level burnout was assessed with the MBI-GS (Schaufeli, Leiter, Maslach, & Jackson, 1996), whereas team level work engagement was measured with the UWES (Schaufeli & Bakker, 2003).

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