

## INEQUITY, BURNOUT AND PSYCHOLOGICAL WITHDRAWAL AMONG TEACHERS: A DYNAMIC EXCHANGE MODEL

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This study examined the relations among inequity, psychological wellbeing and organizational commitment among a longitudinal sample of 920 Dutch teachers. Equity theory provided hypotheses on the mutual effects of inequity experienced in interpersonal and organizational exchange relationships on the one hand, and strain and psychological withdrawal on the other. Further, we expected that distancing oneself from an inequitable exchange relationship would lead to a more equitable balance between investments in and benefits gained from the corresponding exchange relationships. Covariance structure modelling supported the distinction among three types of exchange relationships, as well as the distinction between different sets of outcome variables associated with these relationships. Inequity was related to the expected negative work outcomes within but not across time points. Withdrawal from an inequitable relationship seemed to increase, rather than to decrease the inequity of particular exchange relationships.

*Keywords:* Equity theory; Social exchange theory; Burnout; Commitment; Teachers; Coping

Over the previous decade, a small body of research has focused on the relationship between perceived inequity in exchange relationships at work, and a range of work outcomes such as turnover, organizational commitment and burnout. At the heart of equity theory lies the assumption that people pursue a balance between what they “invest” in a particular relationship (e.g., time, skills, effort) and the benefits they gain from it (such as status, appreciation, gratitude, and pay; Adams, 1965; Buunk and Schaufeli, 1999). Disturbance of this balance is expected to result in negative outcomes. Previous research has generally supported this prediction, e.g., inequity in work relationships has been shown to be associated with lack of organizational commitment (Schaufeli *et al.*, 1996), absenteeism and turnover (Cropanzano and Greenberg, 1997; Geurts *et al.*, 1999), employee theft (Shapiro *et al.*, 1995) and burnout (Van Horn *et al.*, 2001).

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Although this evidence would seem convincing, progress in this area is hampered by two problems. First, equity theory assumes that the stress ensuing from a disturbed balance between investments and outcomes leads people to attempt to restore this balance (Adams, 1965). Some of the work outcomes mentioned above can indeed be construed as more or less conscious strategies to obtain a more equitable balance, either by decreasing one's investments in this relationship (e.g., through behavioural withdrawal by leaving the organization, or through psychological withdrawal in the form of diminished commitment to the organization or depersonalization regarding the recipients of one's services), or by increasing the benefits gained from an exchange relationship (e.g., employee theft). However, to date researchers have conveniently ignored the possibility that at least some of the designated "outcome" variables might just as well affect the "independent" variables in the study. Consequently, little is known about the degree to which withdrawal strategies such as depersonalization and diminished organizational commitment are successful in retaining equity in exchange relationships at work. Thus, one goal of this study is to examine the possibly reciprocal effects between inequity and work outcomes, using a two-wave panel design.

Second, the effects of inequity may be studied with regard to *different exchange relationships* (e.g., with customers or students, or, generally speaking, with recipients of one's services; with colleagues; or with the organization one works for) as well as to a *range of outcome variables*. The effects of inequity on outcome variables tend to vary with the type of exchange relationship and type of outcome variable (Schaufeli *et al.*, 1996; Van Horn *et al.*, 2001). Therefore, a second goal of the current study is to extend our understanding of the effects of inequity as experienced in various types of exchange relationships at work on different (sets of) outcome variables. Based on ideas of Lazarus and Folkman (1984), we distinguish between two such sets, namely affective outcomes (strains), and outcomes directed at reducing (the effects of) occupational stress by withdrawing oneself psychologically from one's job (a form of avoidance coping, Lee and Ashforth, 1996).

A third goal of the present research is to examine the effects of inequity on wellbeing specifically among teachers. There is an extensive literature that deals with the sources and consequences of job stress among teachers (e.g., Borg, 1990; Guglielmi and Tatrow, 1998; Kyriacou, 2001; Travers, 2001; Wisniewski and Gargiuto, 1997, for reviews). Although this research has convincingly demonstrated that the interaction with students may (and often does) lead to high levels of stress, research testing well-founded theoretical models relating the sources of stress among teachers to their health and wellbeing is relatively scarce. By examining the relationship between inequity and outcome variables among a sample of 920 Dutch teachers, the present study intends to contribute to the understanding of the sources and effects of job stress among teachers.

### **Lack of Reciprocity**

In Adams' (1965) seminal paper, the degree to which an exchange relationship is equitable is expressed in terms of the ratios of the investments and outcomes of one party and those of the other party, respectively. *Lack of reciprocity* or *inequity* occurs if one outweighs the other. Note that "lack of reciprocity" and "inequity" are largely interchangeable terms in this conceptualization (Chadwick-Jones, 1976); both involve the comparison of the ratio of own investments and outcomes to that of another party. Pritchard (1969) criticized this way of measuring inequity because it neglects the role of

internal standards as a means for comparison. This “internal standard” refers to “...the amount of outcome Person perceives as being commensurate with his own inputs, *without regard to any comparison person*” (p. 205; italics in the original). According to Pritchard, *intra-personal* comparisons play a crucial role in exchange processes, rather than *social* comparisons as proposed in classical equity theory. This internal standard is largely based on one’s past experience in exchange relationships. A similar stance is implicitly taken in Siegrist’s (1996) Effort–Reward Imbalance theory, in which workers evaluate their efforts against the rewards they receive from their job, and the Hatfield *et al.* (1985) single-item equity measure, asking workers to evaluate their own inputs in a particular relationship against their own outcomes: in neither case reference to others (e.g., one’s co-workers) is included. Following this lead, we define reciprocity as the equality of one’s perceived investments in and benefits from an exchange relationship.

### **Interpersonal vs. Organizational Exchange Relationships at Work**

Buunk and Schaufeli (1993) attempted to connect social exchange processes in the context of the work organization with burnout – a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment (Maslach, 1993). Emotional exhaustion refers to feelings of being emotionally overextended and depleted of one’s emotional resources. Depersonalization involves a negative, indifferent, or overly detached attitude to others. Finally, reduced personal accomplishment refers to a decline of feelings of competence and achievement in one’s work.

Buunk and Schaufeli (1993) started from the assumption that burnout develops primarily within the social and interpersonal context of the work organization. Thus, attention should be paid to the way individuals perceive, interpret and construct the behaviours of others at work. Following Maslach (1993), Buunk and Schaufeli focused on the demanding interpersonal relationship between a provider of services and the recipients thereof. This relationship is complementary by definition, in that one party gives, and the other receives. Because provider and recipient enter their relationship with different expectations towards each other, it is difficult to establish an equitable relationship (Maslach, 1993). While this complimentary relationship forms the basis of the exchange relationship between provider and recipient, the first will continue to look for some rewards from the latter in return for their efforts, e.g., teachers expect their students to show some gratitude, respect, or at least to try to obtain good grades. In practice, however, these expectations may not be met (Maslach, 1993). As a result, providers may feel over time that they continually invest more in the relationship with the recipients of their services than they receive in return. This eventually depletes their emotional resources and, thus, leads to emotional exhaustion (the core component of burnout), depersonalization (as a way of coping with this exhaustion), and feelings of reduced personal accomplishment (Leiter and Maslach, 1988). This reasoning has been confirmed in studies among general practitioners (Bakker *et al.*, 2000), hospital nurses (Schaufeli *et al.*, 1996), and teachers (Van Horn *et al.*, 2001).

Whereas the balance between investments and benefits in the exchange relationship with one’s *colleagues* may not be as systematically disturbed as the balance in the exchange relationship with the recipients of one’s services, the effects of inequity in the former type of interpersonal exchange relationship may be detrimental as well. Previous research has underlined the importance of the quality of the relationship with

colleagues and co-workers for burnout (Leiter and Maslach, 1988), but this study was not framed in a social exchange framework. Yet, Schaufeli *et al.* (1996) argued that relationships among colleagues at work can be construed in terms of social exchange relationships as well. For instance, there is some evidence that employees keep “support bookkeeping” that is based on the balance between giving and receiving support from others. Given the centrality of the relationships with colleagues for work-related outcomes, it would seem reasonable to expect that inequity in the exchange relationship with one’s colleagues is an important determinant of burnout.

*Inequity in an organizational context* It has been argued that burnout should not only be examined in the context of interpersonal relationships at work, but also in the context of the exchange relationship with the organization (O’Driscoll and Cooper, 1996). A body of evidence adds credence to this notion, showing that characteristics of the job and the organization are associated with the onset of burnout (Cordes and Dougherty, 1993). However, few research favouring an organizational perspective on burnout has provided a psychological explanation for the development of burnout in the organizational setting.

According to Schaufeli *et al.* (1996), the notion of a *psychological contract* between employer and employee (Robinson and Rousseau, 1994) provides a useful starting point for such an explanation. The psychological contract is defined as a set of expectations that employees hold about the nature of their exchange relationship with their organization, e.g., concerning workload and pay. More specifically, the psychological contract reflects the employees’ subjective notion of equity and serves as a baseline against which own investments and benefits are evaluated. A violation of the psychological contract may result in negative work outcomes, including a higher intention to quit and higher turnover (Geurts *et al.*, 1999), absenteeism (Geurts *et al.*, 1994), and burnout (Schaufeli *et al.*, 1996). This is consistent with Brill’s (1984) notion of burnout as an “. . .expectationally mediated, job-related dysphoric and dysfunctional state” (p. 15). Thus, unmet expectations about reciprocity lie at the core of a violation of the psychological contract.

### **Generic vs. Specific Outcomes of Perceived Inequity: Coping with Strain and Inequity**

The distinction between interpersonal and organizational exchange relationships is explicitly recognized in Schaufeli *et al.*’s (1996) *dual-level social exchange model*. This model distinguishes between inequity experienced in interpersonal relationships at work, and inequity in the exchange relationship with the organization. Schaufeli *et al.* showed that inequity in both types of exchange relationships contributed to the occurrence of burnout, whereas only inequity in the exchange relationship with the organization contributed to poor organizational commitment. On the one hand, these findings underline the importance of distinguishing between various types of exchange relationships at work; on the other hand they also point to the need to distinguish among different (sets of) outcome variables, contingent on the *type* of exchange relationships under study. That is, some outcomes may be *generic*, in that they are affected by inequity experienced in a variety of exchange relationships, whereas other outcomes could be specific to inequity experienced in one particular type of exchange relationship only.

Following Lazarus and Folkman (1984), in the current study we distinguish between strains and coping behaviours. *Strains* (such as emotional exhaustion) may be considered generic outcomes, in the sense that strain will result from a disturbance in *any* exchange relationship. *Coping behaviours*, in contrast, will be tightly linked to inequity experienced in particular exchange relationships. People will be motivated to restore a disturbed balance, but the actions they take will correspond with the *type* of relationship which they perceive as inequitable. Walster *et al.* (1978) suggested that a lack of reciprocity can be dealt with by decreasing one's investments in an inequitable relationship. They discuss strategies that people may use to restore a disturbed equilibrium between investments and benefits. Many of these strategies (such as retaliation) are usually inappropriate or impractical within the exchange relationships people maintain at work. A psychological strategy to restore equity (such as developing negative attitudes towards the recipients of their services, their colleagues or the organization they are working for) is more feasible under such circumstances. Precisely such callous, cynical, impersonal and derogatory attitudes constitute the *depersonalization* dimension of the burnout syndrome.

By responding to the recipients of their services or their colleagues in a depersonalized way instead of expressing genuine empathic concern, people lower their investments in these exchange relationships (Buunk and Schaufeli, 1999). In this sense, depersonalization towards colleagues or the recipients of ones services can be considered as motivational outcomes directed at restoring a disturbed exchange relationship with the colleagues or recipients, that is, as *coping behaviour*. Decreasing one's commitment to the organization would seem to be a similar strategy: by lowering their commitment to the organization, people decrease their psychological investments in that organization, resulting in a more equitable balance between investments in and benefits gained from this exchange relationship. Depersonalization and (lack of) organizational commitment may thus be considered as strategies to cope with the stress ensuing from a disturbed balance between investments and benefits, in the sense of Lazarus and Folkman (1984) stress-strain-coping model (Lee and Ashforth, 1996; Leiter and Maslach, 1988). By lowering own investments in a disturbed exchange relationship, people may restore the balance in that relationship.

### **A Heuristic Model for the Relations Among Inequity, Strain and Psychological Withdrawal**

The notions outlined above suggest a complex and dynamic model for the relations between lack of reciprocity in exchange relationships on the one hand and work outcomes such as lack of organizational commitment, depersonalization, and emotional exhaustion on the other. Whereas inequity is usually associated with high burnout rates and low organizational commitment, it seems plausible that people who experience inequity in their exchange relationships at work will try to reach a more equitable balance between investments and benefits by lowering their investments (as evidenced by high levels of psychological withdrawal, i.e., high levels of depersonalization and low levels of organizational commitment). This, in turn, might lead to a decrease in feelings of burnout.

Fig. 1 presents a heuristic representation, of the model to be tested in this study. It is tailored to the data under study here, collected in a two-wave study among Dutch primary, secondary and vocational school teachers. The model is based on the

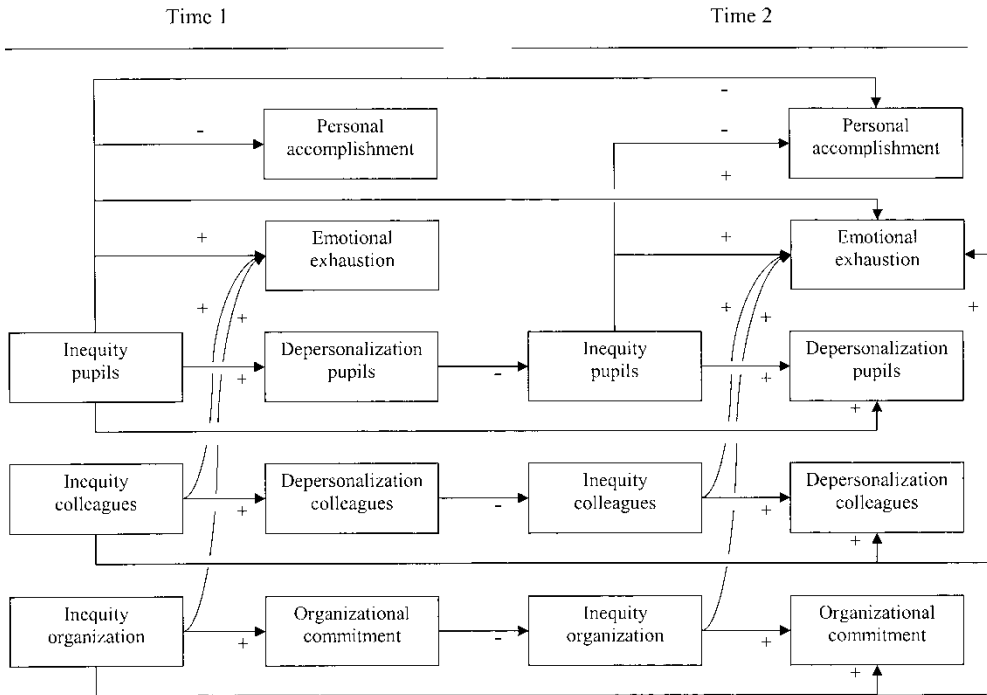


FIGURE 1 Conceptual model for the expected relations among inequity in three types of exchange relationships.

considerations discussed above, and can be considered as a set of hypotheses on the relations among the variables in this study. As Fig. 1 shows, we distinguish among three types of exchange relationships (with students, colleagues, and the organization, respectively). Inequity experienced in each of these relationships results in two types of outcomes: strain and withdrawal.

Strain (emotional exhaustion) is the result of the stress caused by perceived inequity in any of the three exchange relationships considered here, and is therefore not linked to any exchange relationship in particular. In contrast, the type of psychological withdrawal that occurs is contingent on the type of relationship in which inequity is experienced. Inequity in the relationship with one's students will result in withdrawal (depersonalization) from these students (and *not* in withdrawal from one's colleagues). Similarly, inequity in the relationship with one's colleagues will result in withdrawal from these colleagues (but not from the students). Organizational commitment can also be considered as a form of psychological withdrawal, in that low organizational commitment increases one's intentions to leave the organization as well as actual turnover (Mathieu and Zajac, 1990). As such, it will be strongly influenced by inequity in the exchange relationship with the organization.

The third burnout component, personal accomplishment, fits the scheme of strain versus coping behaviours less well than the other outcome variables considered here. Personal accomplishment refers to a subjective judgment of own competence and achievement in one's work. Schachter and Singer's (1962) attribution-of-arousal theory maintained that stimuli may result in arousal, and that the person understands this

arousal in the light of the situation as interpreted by the person. Thus, people may consider the degree to which they experience stress at work as a measure of their performance. The fact that maintaining a particular exchange relationship currently leads to stress whereas this may have been different in the past may lead them to conclude that they perform less well than they used to. If so, there should be a negative association between inequity and personal accomplishment. As a teacher's task consists largely of interaction with students (Van Horn *et al.*, 2001), we expect that only inequity in this particular exchange relationship will have any considerable impact on teachers' feelings of personal accomplishment. A somewhat more down-to-earth account for the presumed negative association between inequity and personal accomplishment is that teachers who do not give the best they got (i.e., who invest little in their exchange relationships) actually accomplish less than they could have. Low levels of personal accomplishment may thus reflect real decreases in personal functioning, whereas this is not necessarily the case in the attribution-of-arousal interpretation discussed above. Again, as the teaching job largely consists of interaction with students, we expect that the exchange relationship with students will be most important in affecting personal accomplishment.

Fig. 1 includes three "feedback" effects. It is assumed that inequity experienced in a particular exchange relationship leads to psychological withdrawal from that relationship (either in the form of depersonalization, or as diminished organizational commitment), which in time is expected to lead to a more equitable ratio between the investments in and the benefits gained from that relationship. Thus, in line with previous research, we construe distancing oneself from a disturbed exchange relationship as a form of coping (Lee and Ashforth, 1993; Leiter and Maslach, 1988; Walster *et al.*, 1978). Assuming that this particular coping pattern is effective, withdrawal should result in lower levels of inequity, and, thus, in lower levels of stress and strain.

Finally, the effects of Time 2 inequity (as experienced in each of the three exchange relationships) on the outcome variables (the three withdrawal variables, exhaustion, and personal accomplishment) are expected to be the same as the corresponding effects at Time 1.

## METHOD

The data were collected as part of a two-wave panel study. The study was conducted among a nationally representative sample of 1,309 healthy Dutch teachers ( $M_{\text{age}}$  was 43.6 years,  $SD = 8.0$ , 51% female, average number of years of teaching experience was 19.1 years,  $SD = 8.3$ , 58% were employed in primary schools, 27% in secondary schools and 13% in vocational schools). At the first wave, the participants completed a written questionnaire that addressed psychological and physical wellbeing, selected work characteristics, inequity and biographical variables. The majority of the sample ( $n = 998$ ) also cooperated in the second wave of the study that was conducted 1 year later, yielding a 76.2% response rate. A multivariate analysis of variance revealed that the mean scores of those who dropped out of the study on the variables employed in this study did not differ significantly from those who remained in the study,  $p(11, 1118) = 0.66$ , n.s. Thus, dropout did not seem to be selective. After listwise deletion of missing values, the final sample included 920 participants.

## Measures

Burnout was assessed with a Dutch adaptation of the Maslach Burnout Inventory – Educators Survey (MBI-ES, Schaufeli and Van Dierendonck, 2000). The MBI-ES consists of three subscales, emotional exhaustion, depersonalization and (reduced) personal accomplishment, respectively. Confirmatory factor analysis revealed that the relations among the items of the three subscales were at both occasions best accounted for by an oblique three-factor solution (i.e., a model in which the items of the three subscales all load on the expected latent dimension, whereas the three latent dimensions are mutually correlated). The latent correlations among the three dimensions ranged from 0.41 to 0.49, all  $p$ 's < 0.001. Further, the three subscales all loaded on the same latent second-order factor, with standardized factor loadings ranging from 0.62 to 0.74 ( $p$ 's < 0.001). These results show that (a) the three scales are only moderately correlated, whereas (b) they still tap the same underlying construct.

*Emotional exhaustion* refers to feelings of being emotionally overextended and depleted of one's emotional resources (Maslach, 1993). Typical items are "I feel emotionally drained from my job" and "I feel used up at the end of a work day" (0 = "never", 6 = "everyday"). The reliability of this 8-item scale (Cronbach's alpha) was 0.91 and 0.92 for Time 1 and Time 2, respectively.

*Depersonalization regarding one's students* refers to a negative, overly detached, and indifferent attitude to one's students. This concept was tapped by a 7-item scale. Typical items were "I worry that this job is hardening me emotionally", and "I feel that I treat some students indifferently" (0 = "never", 6 = "everyday"). In comparison to Maslach and Jackson's (1986) MBI-ES, two items were added to this scale to improve its reliability (see Schaufeli and Van Dierendonck, 2000, for details). These items were "In my work people bother me with personal problems I don't want to be bothered with", and "I try to keep away from personal problems of my students". The reliabilities of this scale were 0.72 and 0.75 for Time 1 and Time 2, respectively.

*Depersonalization regarding one's colleagues* refers to a negative, overly detached and indifferent attitude to one's colleagues. This self-constructed scale roughly paralleled the depersonalization scale for the students and consisted of 8 items, including "I really do not care about what happens to my colleagues", "I like working with my colleagues" (reversed), and "I avoid my colleagues as much as possible" (0 = "never", 6 = "everyday"). The reliabilities of this scale were 0.89 at both time points.

*Personal accomplishment* refers to a decline of feelings of competence and successful achievement in one's work. It is measured by an 7-item scale (reliabilities were 0.86 and 0.87 at Time 1 and Time 2, respectively). Typical items were "I feel I am positively influencing other people's lives through my work", and "I think I know how to deal with my students' problems effectively" (0 = "never", 6 = "everyday").

*Organizational commitment* was measured using a 6-item Dutch adaptation of Mowday *et al.*'s (1979) Organizational Commitment Questionnaire (OCQ). The OCQ taps the strength of the identification with and involvement in a particular organization. Typical items are "I tell my friends that this school is a fine organization to work for", and "I feel that this school offers a challenging work climate" (1 = "strongly disagree", 5 = "strongly agree"). The reliabilities for this scale were 0.91 and 0.93 at Time 1 and Time 2, respectively.

*Inequity* was assessed for three exchange relationships, namely with students, colleagues and the organization. Two measures were available for each relationship.



The first of these was a variation on Hatfield *et al.*'s (1985) well-used single-item equity measure. For the relationship with the students, this item was "When I compare the investments in the work relationship with my students to the benefits that result from this relationship, I receive . . . than I invest" (1 = "much less", 5 = "much more"). For the two other relationships, "students" was replaced with "colleagues" and "school management", respectively.

The second item was computed as the ratio of the scores on two other items. The first of these tapped the subjective *investments* in a particular relationship: "How much do you invest in the work relationship with your students?" (1 = "very little", 5 = "very much"). The second item measured the perceived *benefits* of this relationship: "How much do you receive in return in this relationship?" (1 = "very little", 5 = "very much"). Similar questions were asked for the other two relationships. The distributions of the resulting three ratio variables were rather skewed (skewnesses > 2.00), implying that the application of statistical techniques requiring normally distributed variables was not warranted. In order to obtain lower skewnesses, the natural logarithm of the scores on the three ratio variables was taken. This resulted in variables that were approximately normally distributed (skewnesses < 1.50). All items were coded such that a high score indicated high inequity.

The correlation between the two equity measures varied from 0.56 to 0.71 for each of the three exchange relationships across both time points (median correlation 0.64). Confirmatory factor analysis revealed that for each time point a three-factor model could be retained, with the latent factors corresponding with inequity in the relationship with the students, colleagues, and school, chi-square (34,  $n = 920$ ) at Time 1 was 34.38,  $p < 0.01$ , RMR = 0.02, GFI = 0.99, NNFI = 0.95, RFI = 0.94, and chi-square (6,  $n = 920$ ) = 33.58 at Time 2,  $p < 0.01$ , RMR = 0.02, GFI = 0.99, NNFI = 0.96, RFI = 0.95. Further analyses of the covariance matrix revealed that this factor structure was the same at each time point, chi-square (27,  $n = 920$ ) was 101.17,  $p < 0.01$ , RMR = 0.01, GFI = 0.98, NNFI = 0.97, RFI = 0.96. Thus, this specification was retained in the main analyses.

Table I presents the means and standard deviations for the variables in this study. As this table shows, the participants felt more emotionally exhausted across time ( $p < 0.001$ ) and more depersonalized in their relations with students and colleagues ( $p$ 's < 0.05). Interestingly, they did *not* experience less equity in relation to their students, colleagues or their school. Neither was there significant across-time change in organizational commitment.

### Statistical Analysis

The data were analysed using covariance structure modelling (Jöreskog and Sörbom, 1993). The variables in such models can be latent (i.e., they are functions of two or more observed indicator variables) or manifest (there is only one indicator for a particular construct). Covariance structure modelling marries factor analysis to regression analysis in that this technique allows for a simultaneous estimation of a measurement (factor) model (representing the relations among the observed indicator variables and the latent variables) as well as a structural (regression) model (for the relations among the latent variables). In the current study inequity in each of the three exchange relationships was measured by two indicators at both occasions. There was a one-to-

TABLE I Means and standard deviations of the variables employed in this study (full sample,  $n = 920$ )

Variables	Time 1		Time 2		$T^a$
	$M$	$SD$	$M$	$SD$	
inequity students	3.34	0.78	3.36	0.77	n.s.
imbalance students	0.19	0.28	0.18	0.27	n.s.
inequity colleagues	3.21	0.54	3.23	0.59	n.s.
imbalance colleagues	0.09	0.22	0.09	0.23	n.s.
inequity organization	3.81	0.77	3.83	0.77	n.s.
imbalance organization	0.57	0.51	0.57	0.50	n.s.
emotional exhaustion	1.86	1.14	2.00	1.20	4.96**
depersonalization (students)	1.22	0.87	1.29	0.87	2.52*
depersonalization (colleagues)	1.97	0.58	2.01	0.58	2.45*
personal accomplishment	4.13	0.84	4.11	0.83	n.s.
organizational commitment	3.49	0.82	3.46	0.81	n.s.

<sup>a</sup>The error of these comparisons has 918 *df*.

\* =  $p < 0.05$ , \*\* =  $p < 0.001$ .

one relationship between the observed and the latent variables for the remaining variables.

Model fit was assessed using the chi-square test, the Root Mean Square (RMR), the Adjusted Goodness-of-fit Index (AGFI), the Non-normed Fit Index (NNFI) and the Comparative Fit Index (CFI). For cross-validation purposes, the current sample (including 920 participants) was split into two subsamples of 460 participants each. On each subsample an independent analysis of the null model was performed. The results were then compared to obtain an impression of the degree to which capitalization on chance presented a threat to the validity of the study. The correlations among the variables are presented in the Appendix.

## RESULTS

The model presented in Fig. 1, complemented with the expected longitudinal effects, was fitted to both data sets. The null model presented in Fig. 1 fitted the data well across both data sets, chi-square for Sample A (171,  $n = 460$ ) was 245.3, AGFI = 0.97, RMR = 0.047, NNFI = 0.99, CFI = 0.99; chi-square for Sample B (171,  $n = 460$ ) was 287.8, AGFI = 0.97, RMR = 0.051, NNFI = 0.98, CFI = 0.98). Inspection of the parameter estimates and the corresponding  $t$ -values revealed that several effects were not significantly different from 0. These effects were omitted. However, the fit of the models remained virtually unchanged, chi-square for Sample A (176,  $n = 460$ ) was 253.3 AGFI = 0.97, RMR = 0.048, NNFI = 0.99, CFI = 0.99; chi-square for Sample B (177,  $n = 460$ ) was 295.1, AGFI = 0.97, RMR = 0.051, NNFI = 0.98, CFI = 0.98.

Table II and Fig. 2 present the standardized parameter estimates for the final models. It is convenient to discuss these results in three separate sets of effects. The first of these concerns the relations among the variables within time points only (i.e., how well accounts the model presented in Fig. 1 for the data collected at each of the two time points, considered as two cross-sections). The second set of results applies to the longitudinal extension of the model presented in Fig. 1 (i.e., can the effects found within time points be replicated *across* time). Finally, the third set of results refers to the effects

TABLE II Standardized least squares estimates for the fitted models (structural effects only, upper estimate Sample A, lower estimate sample B)

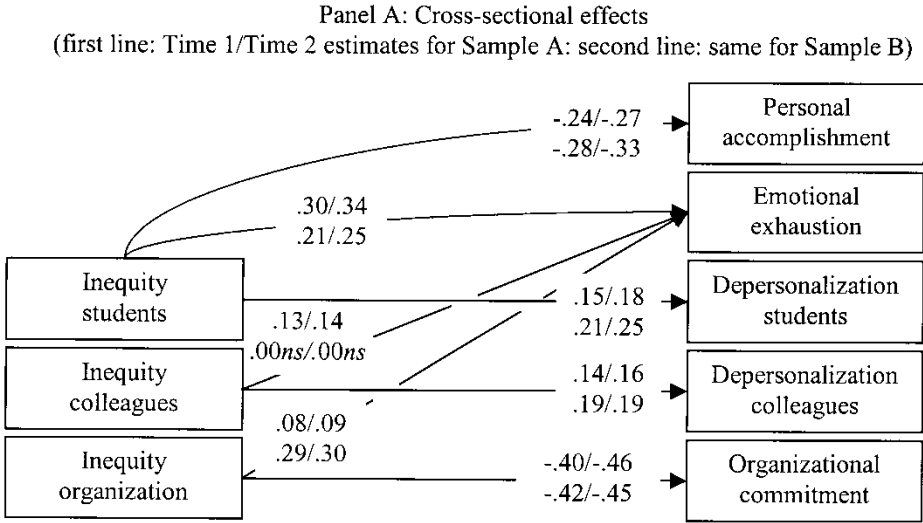
<i>Time 2</i>	<i>Time 2</i>								<i>Time 1</i>				
	<i>Exhaustion</i>	<i>Depers. Students</i>	<i>Personal accompl.</i>	<i>Depers. colleagues</i>	<i>Organ. commit.</i>	<i>Inequity students<sup>b</sup></i>	<i>Inequity coll.<sup>b</sup></i>	<i>Inequity organiz.<sup>b</sup></i>	<i>Exhaustion</i>	<i>Depers. Students</i>	<i>Personal accompl.</i>	<i>Depers. colleagues</i>	<i>Organ. Commit.</i>
Inequity students <sup>b</sup>	0.30**** <sup>a</sup>	0.15**** <sup>a</sup>	-0.24**** <sup>a</sup>										
Inequity colleagues <sup>b</sup>	0.21**** <sup>a</sup>	0.21**** <sup>a</sup>	-0.28**** <sup>a</sup>	0.14**** <sup>a</sup>									
Inequity organization <sup>b</sup>	0.13**** <sup>a</sup>			0.19**** <sup>a</sup>									
	n.s.				-0.40**** <sup>a</sup>								
	0.08**** <sup>a</sup>				-0.42**** <sup>a</sup>								
	0.29**** <sup>a</sup>												
<i>Time 1</i>													
Exhaustion	0.72**** <sup>a</sup>												
	0.83**** <sup>a</sup>												
Depers. students		0.54***				0.23***							
Personal accomplishm.		0.61***				0.11*							
Depers. colleagues			0.62***										
Organizational Commitment			0.70***	0.69***		0.09*							
				0.72***	0.82***	n.s.							
					0.82***	n.s.							
Inequity students <sup>b</sup>	-0.16*	n.s.	n.s.			0.67***			0.34**** <sup>a</sup>	0.18**** <sup>a</sup>	-0.27**** <sup>a</sup>		
Inequity colleagues <sup>b</sup>	-0.15*	n.s.	0.19**			0.62***			0.25**** <sup>a</sup>	0.25**** <sup>a</sup>	-0.33**** <sup>a</sup>		
Inequity organization <sup>b</sup>	-0.16*			n.s.			0.66***		0.14**** <sup>a</sup>			0.16**** <sup>a</sup>	
	n.s.			n.s.			0.53***		n.s.			0.19**** <sup>a</sup>	
	n.s.				0.32**			0.71***	0.09**** <sup>a</sup>				-0.46**** <sup>a</sup>
	-0.20**				0.30**			0.64***	0.30**** <sup>a</sup>				-0.45**** <sup>a</sup>
<i>R</i> <sup>2</sup>	0.67	0.38	0.53	0.54	0.72	0.57	0.46	0.51	0.19	0.03	0.07	0.03	0.21
	0.77	0.49	0.54	0.58	0.75	0.44	0.29	0.40	0.20	0.06	0.11	0.04	0.20

<sup>a</sup>This effect was constrained to be equal across occasions.

<sup>b</sup>Standardized loadings vary between 0.72 and 0.89, median loading 0.78, all  $p$ 's < 0.001.

\* =  $p < 0.05$ , \*\* =  $p < 0.01$ , \*\*\* =  $p < 0.001$ .

n.s. = effect was hypothesized but not significant ( $p > 0.05$ ), and thus omitted.



**Panel B: Lagged longitudinal effects** (first estimate: Sample A, second estimate: Sample B)

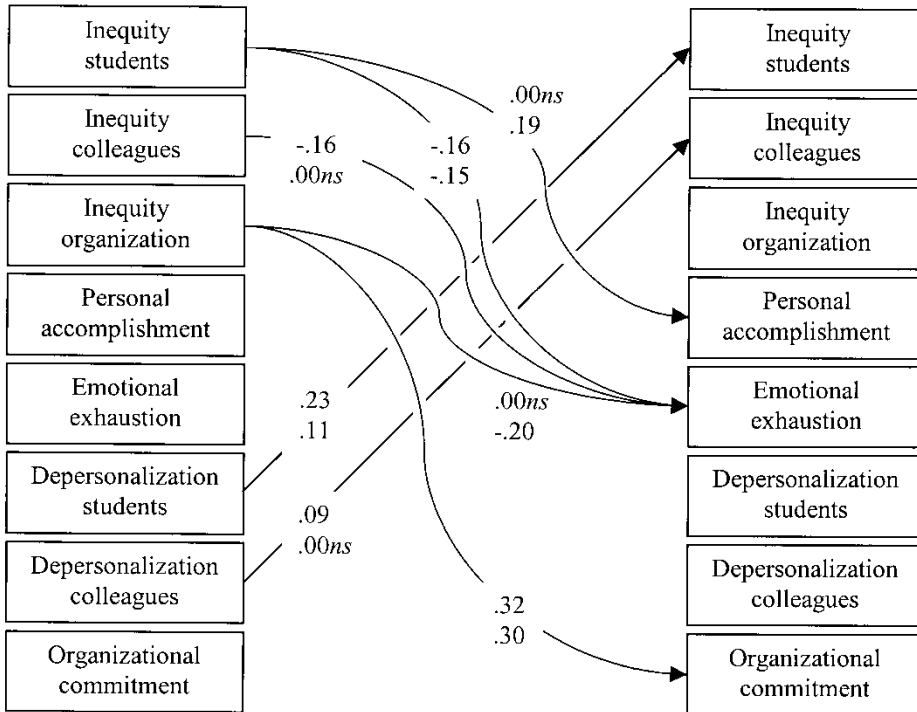


FIGURE 2 Graphical representation of the cross-sectional effects (Panel A) and lagged longitudinal effects (Panel B) presented in Table 2 (all effects significant at  $p < 0.05$ , except ns).

of the three withdrawal/coping-variables (depersonalization regarding students and colleagues and lowered organizational commitment) as measured at Time 1 on the inequity-variables measured at Time 2 (i.e., does psychological withdrawal from a relationship result in a more equitable ratio between investments and returns for this relationship).

### **Cross-Sectional Results**

In the introduction to this paper we distinguished between strains and variables reflecting psychological withdrawal. Strain (i.e., emotional exhaustion) was expected to be affected by all three types of exchange relationships, whereas the withdrawal variables (depersonalization with regard to one's students and depersonalization with regard to one's colleagues, and lowered organizational commitment) were assumed to be related to one type of exchange relationship in particular, and not to the other types. Table II and Fig. 2, Panel A, reveal that these expectations were largely supported within each cross-section and across samples. Increases in emotional exhaustion were indeed predicted by increases of inequity in all three exchange relationships. Inequity in the exchange relationships with students and in the relationship with the organization were most consistently related to exhaustion (effects ranging from 0.21 to 0.34 for the students, and from 0.08 to 0.30 for the organization, all effects  $p < 0.01$  or better). The effects of inequity in the relationship with the colleagues were somewhat weaker and less consistent across samples (effects of 0.13 and 0.14 in sample A, effects n.s. in sample B).

As regards the three "specific" outcome variables, depersonalization towards the students was predicted exclusively by perceived inequity in the exchange relationship with the students (effects of 0.15–0.25,  $p$ 's  $< 0.001$ ). Similarly, feelings of depersonalization in relation to ones colleagues were predicted by perceived inequity in the exchange relationship with these colleagues (effects of 0.10–0.14,  $p$ 's  $< 0.001$ ), but not by other variables. Finally, lowered levels of organizational commitment were associated with higher levels of inequity as experienced in the relationship with the organization (effects of  $-0.40$  to  $-0.46$ ,  $p$ 's  $< 0.001$ ).

Personal accomplishment was expected to be strongly related to inequity experienced in the relationship with the students. This reasoning was confirmed by effects ranging from  $-0.24$  to  $-0.33$  ( $p$ 's  $< 0.001$ ), supporting the idea that teachers interpret the levels of stress resulting from inequitable relationships with students as an indication of their performance or, alternatively, that lower investments lead to lower levels of achievement.

Whereas the results presented here are consistent with the ideas advanced in the introduction to this study, it should be noted that they are based on cross-sectional data. Thus, while these results suffice to show that one may distinguish among various types of exchange relationships, these relationships cannot be interpreted in causal terms. The next set of results therefore focuses on the longitudinal implications of this model.

### **Longitudinal Effects of Inequity on the Outcome Variables**

Table II and Fig. 2, Panel B, show that the direct lagged effects of the Time 1 inequity variables on the outcome variables as measured at Time 2 were often not significantly

different from 0. If they were significant, the magnitude of these effects was quite small (effects ranging from 0.15 to 0.32, median value 0.19,  $p$ 's < 0.05), and as a rule they did not replicate across samples. Interestingly, whenever an effect was found, its sign was *contrary* to what was expected. For example, within each cross-section inequity in the exchange relationship with the organization was negatively related to commitment to that organization (effects of  $-0.40$  to  $-0.46$ ,  $p$ 's < 0.001, Fig. 2, Panel A). However, the corresponding longitudinal effects were *positive* (effects were 0.30 and 0.32,  $p$ 's < 0.01, Panel B). This finding is even more noteworthy as the corresponding across-time correlation coefficients underlying this effect were also negative ( $r$ 's ranging from  $-0.11$  to  $-0.25$ ,  $p$ 's < 0.001, see Appendix). Similar findings apply to the longitudinal effects of the inequity variables on other outcome variables. The least that can be concluded from these findings is that there is no longitudinal support for the model presented in Fig. 1. Although teachers who experienced much inequity in their exchange relationships at Time 1 also experience more negative work outcomes at Time 2, these effects were largely indirect (via Time 1 work outcomes and Time 2 inequity), rather than via direct effects of Time 1 inequity on the Time 2 outcome variables.

### **Feedback-Effects of the Withdrawal-Variables on Lack of Reciprocity**

Finally, it was hypothesized that psychological withdrawal from a particular exchange relationship (in terms of depersonalization with regard to one's students and colleagues, and diminished commitment to the organization, respectively) would result in a more equitable balance between investments in and benefits gained from that relationship. Table II and Fig. 2, Panel B, show that these ideas were not supported by the data. Rather, there was some evidence that teachers who obtained high scores on the withdrawal variables at Time 1 experienced *less* equity in the corresponding exchange relationships at Time 2. In both samples high depersonalization with regard to one's students was associated with more feelings of inequity in this relationship at Time 2 (effects of 0.23 and 0.11,  $p$ 's < 0.05). Similarly, in one sample high depersonalization regarding one's colleagues at Time 1 was related to more feelings of inequity in the relationship with one's colleagues at Time 2 (an effect of 0.08,  $p$  < 0.05). These findings suggest that psychological withdrawal from an exchange relationship is an ineffective strategy to obtain a equitable balance between investments and benefits. Rather, it seems that psychological withdrawal from a disturbed exchange relationship fosters a deterioration of the balance between investments and rewards, marking the onset of a "downward spiral".

## **DISCUSSION**

The current study examined the effects of inequity in three exchange relationships (with students, colleagues and the organization) on several outcome variables (organizational commitment, emotional exhaustion, depersonalization with regard to students and colleagues and personal accomplishment) in a longitudinal study among 920 Dutch teachers. Following Lazarus and Folkman (1984), we expected that it would be possible to distinguish between two sets of outcome variables, namely strains (which would be affected by feelings of inequity, irrespective of the type of exchange relationship in which it was experienced) and withdrawal or coping variables (which would be linked

to one type of exchange relationship in particular). Further, we examined whether the expected cross-sectional effects could be replicated longitudinally. Finally, we examined whether (and if so, how) psychological withdrawal from an exchange relationship (in terms of depersonalization regarding one's students or colleagues, or a diminished commitment to the organization) would positively affect the balance between investments in and benefits gained from that relationship.

The results provided good support for the distinction among the three exchange relationships. Each of these relationships retained different patterns of effects on the outcome variables, both within and across occasions, showing that the theoretical distinctions among these relationships were warranted empirically. Further, the distinction between strain and withdrawal variables was confirmed as well. Whereas emotional exhaustion was affected by inequity experienced in all three types of exchange relationships, each of the three other outcome variables was linked to a specific type of exchange relationship (depersonalization regarding one's students – inequity regarding the relationship with one's students, depersonalization regarding one's colleagues – inequity regarding the relationship with one's colleagues and reduced organizational commitment – inequity regarding the relationship with the organization). These results confirm the findings reported by Schaufeli *et al.* (1996).

Personal accomplishment fitted the framework outlined above less well. Following Schachter and Singer's (1962) attribution-of-arousal theory, we proposed that the stress resulting from maintaining an inequitable exchange relationship with one's students (which was expected to be the potentially most stressful exchange relationship, Van Horn *et al.*, 2001, Study 1) would lead teachers to infer that they perform inadequately. This reasoning was cross-sectionally confirmed by negative effects of inequity in the exchange relationship with one's students on personal accomplishment.

*Within* each cross-section, the expected effects of the inequity variables on the outcomes were confirmed. The more inequity teachers perceive in their exchange relationships, the higher the likelihood that negative work outcomes occur. However, this pattern of effects was *not* replicated longitudinally. Rather than to replicate the cross-sectional effects longitudinally (thus providing support for a causal interpretation of the effects of inequity on work outcomes), we either found effects that were not significantly different from 0, or effects that ran *contrary* to our expectations. For example, whereas the cross-sectional evidence showed that teachers who experienced much inequity in the relationship with their students had a high risk to become emotionally exhausted, the corresponding longitudinal effect was *negative* – even though the corresponding underlying correlation coefficients were positive. Similar findings were obtained for other longitudinal effects.

Such findings are often interpreted as *suppressor* effects. Although such effects are often considered statistical artifacts that do not deserve much attention (see Lee and Ashforth, 1993), they are not necessarily void of meaning. These negative effects suggest that people may have access to "coping strategies" that allow them to handle the potentially harmful consequences of prolonged exposure to highly inequitable exchange relationships. Psychological withdrawal (in the form of diminished commitment to the organization, or depersonalization with regard to students or colleagues) can be considered one such strategy; however, other strategies may be used as well. For example, teachers who feel that they invest too much in or receive too little from a particular exchange relationship may engage in cognitive re-appraisal of these

investments and benefits. At least one successful program for the treatment of burned-out workers is based on such a re-appraisal principle (Van Dierendonck *et al.*, 1998). Alternatively, people may choose to leave their organization; a change of environment may improve their work situation as well.

### **Coping with Inequity: Psychological Withdrawal**

Another goal of the current study was to examine whether psychological withdrawal from disturbed exchange relationships (in the form of depersonalization with regard to one's colleagues and students, or a diminished organizational commitment) would result in a more equitable balance (Adams, 1965). The results presented here show that this is *not* the case; rather than to restore the balance between investments and benefits, psychological withdrawal seemed to increase the disbalance. *Post-hoc* analyses revealed that Time 1 psychological withdrawal did not only result in lower investments in a particular exchange relationship at Time 2 (as was expected), but in lower benefits gained from that relationship as well. The average correlation between the three psychological withdrawal variables and the investments in the corresponding exchange relationship was  $-0.26$ , computed across all three relationships; the average correlation between the three withdrawal variables and the benefits gained from the corresponding relationship was  $0.32$ , all  $p$ 's  $< 0.001$ . Thus, lower investments covaries with lower returns, meaning that the disbalance remains about the same.

Equity theory provides an elegant interpretation of this finding. Exchange processes are per definition *dyadic* processes. One party's investments are often the other party's benefits, and vice-versa. Thus, if one party decides to lower their investments in a relationship, the other party will see their benefits gained from this relationship decrease. As *both* parties strive after a rewarding exchange relationship, the other party will decrease their investments in the relationship as well – which makes the relationship even less rewarding for the first party, and so on. If this is correct, psychological withdrawal from an exchange relationship would seem a particularly effective way to *destroy* this relationship, and certainly not one that should be included in a counselling programme designed for employees experiencing high inequity in their exchange relationships. Indeed, this result questions the common practice of teaching medical students an attitude of “detached concern” towards their patients (Lief and Fox, 1963), as detachment may well have counterproductive effects on the quality of the relationship between caregiver and recipient.

### **Stress Among Teachers and Burnout: The Role of Equity**

A final goal of the present study was to examine the utility of a theoretical framework for the relations among sources of stress among teachers (i.e., the quality of the exchange relationships with students, colleagues and the organization) on their wellbeing. The present study has shown that lack of equity may be an intervening psychological mechanism that links the sources of stress among teachers to consequences for their wellbeing. In this sense the present study extends and enhances previous work on stress among teachers (e.g., Travers, 2001; Wisniewski and Gargiuto, 1997, for reviews).



### Limitations and Directions for Future Research

Four important limitations of this study must be acknowledged. First, the current study was conducted among teachers. Although the findings were replicated across two statistically independent samples, replication across different *occupations* is indispensable for generalizing the findings to other occupations.

Second, the study included self-report measures only, meaning that the correlations among the variables may have been inflated by common method variance or the tendency of respondents to provide answers that are consistent with previous answers (e.g., Kasl, 1998). Although such processes cannot be precluded, their effects would seem less consequential for the *longitudinal* findings presented here.

Third, note that the present study included two measurements with a 1-year wave in between, whereas the participants were sampled from the general population of healthy Dutch teachers. This design poses several related problems. First, it is unknown whether the 1-year time lag corresponds with the underlying “true” causal lag between inequity, burnout and withdrawal. A 1-year time lag may be too long to capture the effects of, say, withdrawal on burnout adequately. If so, the effects of withdrawal on burnout will have been underestimated. Thus, the present study cannot provide conclusive evidence regarding the magnitude of the effects among the variables; replication using a longitudinal design with more than two waves with shorter intervals between the waves seems desirable (Taris, 2000, and Zapf *et al.* 1996, for further discussions). A related limitation is that the participants in the study were “caught” in different phases of the process examined here, i.e., they will hold different positions in the inequity-stress-coping-outcome sequence proposed in this study. For example, it would be interesting to see whether teachers who have a high score on Time 1 depersonalization experience lower levels of inequity at Time 2. Such subgroup analyses may provide a more precise insight in the development of the process under study, but are beyond the scope of the current study.

A final limitation of this study is that the withdrawal behaviours included in this study represent a selection of possible coping strategies. Individuals may use strategies that are more successful in restoring a disturbed balance between investments in and returns from a relationship. Indeed, the “psychological withdrawal” variables included in this study would seem to represent the “passive” pole of a continuum ranging from “passive” to “active” coping strategies. It is therefore important to study the effects of other coping strategies in follow-up research.

### Study Implications

In spite of the limitations outlined above, we believe that this study presents interesting and important new insights in the relation among inequity, burnout and psychological withdrawal behaviour of employees. Contrary to earlier work, the general theoretical framework presented here allows for the deduction of hypotheses on the effects of inequity experienced in various types of exchange relationships on various sets of outcome variables. Although much work remains to be done (involving more and more diverse types of outcome variables, to be studied in other occupational groups), the distinction between strains and coping behaviours seems potentially valuable for future research.

From a practical point of view it is important to note that psychological withdrawal from a disturbed exchange relationship is unsuccessful in restoring an equitable balance for this relationship. One perhaps more successful strategy is cognitive re-appraisal of the investments in and benefits gained from a particular exchange relationship (Van Dierendonck *et al.*, 1998). Furthermore, the results presented here suggest that negative work outcomes may result from a variety of inequitable exchange relationships, underlining that the work situation contains many possible sources of negative work outcomes. In order to prevent such undesirable outcomes, it may be insufficient to improve only one aspect of the work situation if other problematic aspects are not dealt with as well, e.g., we found that among teachers inequity in the relationship with the students had the strongest effects on burnout (i.e., exhaustion, depersonalisation and diminished personal accomplishment), while inequity in the relationship with the organization was a strong precursor of lowered organizational commitment (see Schaufeli *et al.*, 1996, for similar results among nurses). Improving the exchange relationship with the students, therefore, may enhance teacher wellbeing, but will have little impact on teacher turnover. Thus, strain and withdrawal are two aspects of working life that reflect the outcomes of two different processes that should be dealt with accordingly: measures targeted to improve the first may have little effect on the second, and vice versa.

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### **References**

- Adams, J.S. (1965). Inequity in social exchange. In: Berkowitz, L. (Ed.), *Advances in Experimental Social Psychology*, Vol. 2, pp. 267–299. Academic Press, New York.
- Bakker, A.B., Schaufeli, W.B., Sixma, H.J., Bosveld, W. and Van Dierendonck, D. (2000). Patient demands, lack of reciprocity, and burnout: a 5-year longitudinal study among general practitioners. *Journal of Organizational Behavior*, **21**, 425–441.
- Borg, M.G. (1990). Occupational stress in British educational settings: a review. *Educational Psychology*, **10**, 103–126.
- Brill, P.B. (1984). The need for an operational definition of burnout. *Family and Community Health*, **6**, 12–24.
- Buunk, B.P. and Schaufeli, W.B. (1993). Professional burnout: a perspective from social comparison theory. In: Schaufeli, W.B., Maslach, C. and Marck, T. (Eds.), *Professional Burnout: recent developments in theory and research*, pp. 53–69. Taylor & Francis, New York.
- Buunk, B.P. and Schaufeli, W.B. (1999). Reciprocity in interpersonal relationships: an evolutionary perspective on its importance for health and well-being. In: Stroebe, W. and Hewstone, M. (Eds.), *European Review of Social Psychology*, Vol. 10, pp. 259–291. Wiley, Chichester.
- Chadwick-Jones, J.K. (1976). *Social Exchange Theory: its structure and influence in social psychology*. Academic Press, London.
- Cordes, C. and Dougherty, T. (1993). A review and integration of research on job burnout. *Academy of Management Review*, **18**, 621–656.
- Cropanzano, R. and Greenberg, J. (1997). Progress in organizational justice: tunnelling through the maze. In: Cooper, C.L. and Robertson, I.T. (Eds.), *International Review of Industrial and Organizational Psychology*, Vol. 12, pp. 317–372. Wiley, Chichester.
- Geurts, S.A., Buunk, B.P. and Schaufeli, W.B. (1994). Social comparisons and absenteeism: a structural modeling approach. *Journal of Applied Social Psychology*, **24**, 1871–1890.
- Geurts, S.A., Schaufeli, W.B. and Rutte, C.G. (1999). Absenteeism, turnover intention, and inequity in the employment relationship. *Work and Stress*, **13**, 253–267.

- Guglielmi, R.S. and Tatrow, K. (1998). Occupational stress, burnout, and health in teachers: a methodological and theoretical analysis. *Review of Educational Research*, **68**, 61–99.
- Hatfield, E., Traupmann, J., Sprecher, S. and Hay, J. (1985). Equity and intimate relations: recent research. In: Ickes, W. (Ed.), *Compatible and incompatible relationships*, pp. 309–321. Pergamon Press, Oxford.
- Jöreskog, K.G. and Sörbom, D. (1993). LISREL-8 (computer manual). Chicago, Scientific Software.
- Kasl, S.V. (1998). Measuring job stressors and studying the health impact of the environment: an epidemiologic commentary. *Journal of Occupational Health Psychology*, **3**, 390–401.
- Kyriacou, C. (2001). Teacher stress: directions for future research. *Educational Review*, **53**, 27–35.
- Lazarus, R.L. and Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer, New York.
- Lee, R.T. and Ashforth, B.E. (1993). A longitudinal study of burnout among supervisors and managers: comparisons between the Leiter and Maslach (1988) and Golembiewski et al. (1986) models. *Organizational Behavior and Human Decision Processes*, **54**, 369–398.
- Lee, R.T. and Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of burnout. *Journal of Applied Psychology*, **81**, 123–133.
- Leiter, M. and Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment. *Journal of Organizational Behavior*, **9**, 297–308.
- Lief, H.I. and Fox, R.C. (1963). Training for “detached concern” in medical students. In: Lief, H.I., Lief, V.P. and Lief, N.R. (Eds.), *The Psychological Basis of Medical Practice*, pp. 12–35. Harper & Row, New York.
- Maslach, C. (1993). Burnout: a multi-dimensional perspective. In: Schaufeli, W.B., Maslach, C. and Marek, T. (Eds.), *Professional Burnout: recent developments in theory and research*, pp. 19–32. Taylor & Francis, New York.
- Maslach, C. and Jackson, S.E. (1986). *MBI: The Maslach Burnout Inventory: Manual research edition*. Consulting Psychologists Press, Palo Alto, CA.
- Mathieu, J.E. and Zajac, D.M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, **108**, 171–194.
- Mowday, R.T., Steers, R.M. and Porter, L.W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, **14**, 224–247.
- O’Driscoll, M.P. and Cooper, C.L. (1996). Sources and management of excessive job stress and burnout. In: Warr, P.B. (Ed.), *Psychology at Work*, 4th edition, pp. 188–223. Penguin, Harmondsworth.
- Pritchard, R.D. (1969). Equity theory: a review and critique. *Organizational Behavior and Human Performance*, **4**, 176–211.
- Robinson, S.L. and Rousseau, D.M. (1994). Violating the psychological contract: not the exception but the norm. *Journal of Organizational Behavior*, **15**, 245–259.
- Schachter, S. and Singer, J. (1962). Cognitive, social and physiological determinants of emotional state. *Psychological Review*, **69**, 379–399.
- Schaufeli, W.B., Van Dierendonck, D. and Van Gorp, K. (1996). Burnout and reciprocity: towards a dual-level social exchange model. *Work and Stress*, **10**, 224–237.
- Schaufeli, W.B. and Van Dierendonck, D. (2000). *Handleiding van de Utrechtse Burnout Schaal (UBOS) [Test Manual of the Dutch Maslach Burnout Inventory]*. Lisse, Swets Test Services.
- Shapiro, S.L., Trevino, L.K. and Victor, B. (1995). Correlates of employee theft: a multi-dimensional justice perspective. *International Journal of Conflict Management*, **6**, 404–414.
- Siegrist, J. (1996). Adverse health effects of high effort/low reward conditions. *Journal of Occupational Health Psychology*, **1**, 27–41.
- Taris, T.W. (2000). *A Primer in Longitudinal Data Analysis*. Sage, London.
- Travers, C.J. (2001). Stress in teaching: Past, present and future. In: Dunham, J. (Ed.), *Stress in the Workplace: past, present and future*, pp. 130–163. Whurr Publishers, London.
- Van Dierendonck, D., Schaufeli, W.B. and Buunk, B.P. (1998). The evaluation of an individual burnout intervention program: the role of inequity and social support. *Journal of Applied Psychology*, **83**, 392–407.
- Van Horn, J.E., Schaufeli, W.B. and Taris, T.W. (2001). Lack of reciprocity among Dutch teachers: Validation of reciprocity indices and their relation to stress and well-being. *Work and Stress*, **15**, 191–213.
- Walster, F., Walster, G.W. and Berscheid, E. (1978). *Equity: theory and research*. Allyn & Bacon, Boston, MA.
- Wisniewski, L. and Gargiuto, R.M. (1997). Occupational stress and burnout among special educators: a review of the literature. *Journal of Special Education*, **31**, 325–346.
- Zapf, D., Dormann, C. and Frese, M. (1996). Longitudinal studies in organizational stress research: a review of the literature with reference to methodological issues. *Journal of Occupational Health Psychology*, **1**, 145–169.

## APPENDIX

Correlation matrix for the variables in Sample A (above the diagonal; N = 460) and Sample B (below the diagonal; N = 460) for Time 1 and Time 2

variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Time 2																						
1. EE	–	.45	.33	–.33	–.41	.16	.24	.10	.06	.18	.27	.78	.37	.33	–.21	–.34	.22	.29	.09	.12	.25	.24
2. DPS	.41	–	.43	–.37	–.39	.15	.23	.06	.00	.09	.14	.35	.60	.41	–.31	–.34	.20	.26	.05	.12	.13	.10
3. DPC	.32	.33	–	–.22	–.48	.05	.05	.17	.09	.14	.12	.26	.43	.71	–.30	–.40	.15	.18	.13	.13	.08	.04
4. PA	–.36	–.32	–.25	–	.42	–.32	–.24	–.01	.07	–.02	–.03	–.24	–.35	–.24	.01	.36	–.22	–.16	.07	–.01	–.05	.01
5. COM	–.38	–.31	–.44	.41	–	.16	–.12	–.19	–.16	–.31	–.27	–.30	–.40	–.46	.04	.75	–.16	–.21	–.04	.15	–.25	–.20
6. EQS	.32	.32	.14	–.38	–.28	–	.59	.05	.00	.15	.12	.17	.15	.07	.10	–.13	.46	.37	–.02	.02	.07	.06
7. BALS	.28	.20	.07	–.29	–.20	.56	–	.00	.09	.15	.20	.20	.06	–.02	–.11	.43	.45	–.03	.04	.09	.07	.07
8. EQC	.12	.01	.20	.06	.18	.10	.00	–	.61	.22	.17	.07	.09	.14	–.19	–.10	.10	.08	.29	.26	.16	.19
9. BALC	.12	.00	.19	.05	–.23	.02	.07	.57	–	.15	.11	.03	–.01	.00	–.24	–.05	.08	.12	.31	.30	.14	.20
10. EQM	.16	.06	.05	–.06	–.28	.22	.14	.25	.10	–	.64	.14	.06	.11	.32	–.23	.10	.10	.05	.06	.39	.33
11. BALM	.19	.05	.03	–.01	–.17	.13	.17	.19	.17	.64	–	.26	.08	.11	.62	–.16	.09	.14	.00	.03	.34	.43
Time 1																						
12. EE	.74	.32	.27	–.29	–.31	.24	.22	.09	.14	.14	.10	–	.36	.31	–.19	–.36	.27	.33	.12	.16	.28	.29
13. DPS	.39	.52	.33	–.36	–.26	.19	.13	–.04	.00	.05	.07	.41	–	.48	–.31	–.39	.22	.27	.06	.13	.14	.04
14. DPC	.29	.28	.65	–.20	–.36	.14	.07	.16	.13	.10	.08	.29	.34	–	–.27	–.48	.13	.17	.15	.18	.12	.07
15. PA	–.35	–.24	–.25	.68	.35	–.23	–.17	.02	.00	–.07	–.02	–.35	–.37	–.20	–	.41	–.31	–.24	–.01	–.04	–.02	.03
16. COM	–.33	–.27	–.33	.31	.74	–.25	–.21	–.16	–.19	–.24	–.18	–.37	–.24	–.36	.36	–	–.22	–.24	–.14	–.15	–.32	–.22
17. EQS	.31	.15	.08	–.28	–.19	.45	.38	.01	–.01	.14	.12	.35	.17	.12	–.28	–.23	–	.64	.10	.10	.20	.14
18. BALS	.32	.18	.06	–.25	–.18	.42	.51	.01	.09	.13	.09	.35	.19	.08	–.25	–.19	.64	–	.07	.20	.19	.21
19. EQC	.08	.01	.15	–.03	–.15	.14	.11	.35	.45	.04	.07	.16	.02	.15	–.02	–.20	.14	.08	–	.68	.15	.14
20. BALC	.12	.04	.12	.00	–.11	.07	.12	.33	.45	.04	.09	.19	.01	.10	–.02	–.17	.07	.07	.70	–	.10	.13
21. EQM	.18	.03	.07	–.05	–.28	.12	.14	.17	.19	.44	.42	.25	.03	.03	–.08	–.30	.21	.17	.24	.16	–	.63
22. BALM	.18	.03	.04	.00	–.23	.08	.15	.12	.18	.44	.48	.22	.05	.02	.00	–.26	.09	.12	.09	.09	.71	–

*Note.* Correlations of .09 and higher are significant at  $p < .05$ . EE = emotional exhaustion; PA = personal accomplishment; COM = organizational commitment; DPS = depersonalization students; DPC = depersonalization colleagues; EQS = inequity relationship students; BALS = unbalance relationship students; EQC = inequity relationship colleagues; BALC = imbalance relationship colleagues; EQM = inequity relationship school management; BALM = imbalance relationship school management.