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The Effects of Past and Anticipated Future Downsizing on Si Well-Being: An Equity Perspective

Raija Kalimo
Finnish Institute of Occupational Health

Toon W. Taris
Nijmegen University and Utrecht Un

Wilmar B. Schaufeli
Utrecht University

Worker well-being was examined as a function of past downsizing and expectations concerning future downsizing. Data from 1,297 Finnish workers were analyzed using analysis of variance and structural modeling analysis. Having experienced downsizing in the past or anticipating downsizing in the future was associated with elevated levels of inequity, which in turn were associated with elevated levels of psychological strain, cynicism, and absence. There were also direct effects of past/anticipated future downsizing on strain, cynicism, and absence, meaning that inequity only partly mediated the relationship between downsizing and well-being. Moreover, well-being varied as a function of type of downsizing.

Many organizations are currently experiencing large-scale change to their structures, procedures, and personnel in an effort to become a strong player in the "global business olympics" (Kets De Vries & Balasz, 1997). For example, among 1,441 major U.S. employers, 48.2% reported job cuts of on average 11.8% of their workforce during 1999–2000. Lower current or anticipated demand for their products was not the primary reason for these job cuts: Organizational restructuring and reengineering of business processes accounted for 50.4% of these job cuts (vs. 14.5% for lower demand; American Management Association, 2000). Bond, Galinsky, and Swanberg (1998) found that 29% of their national sample of 3,000 American employees considered it "somewhat" or "very likely" that they would los in the next couple of years, suggesting tha ing is a frequently occurring phenomer United States. Comparable figures for Finl the present study was conducted) suggest too, downsizing occurs frequently: A stu Finnish Ministry of Labor (2001) showed the respondents feared to be dismissed coming year, whereas 13% worried abou layoff.

It is well-known that organizationa (including layoffs, downsizing, acquisit mergers, but also job relocations, tecl innovations at work, management restruc troduction of team-based work, and the have adverse effects on employee well-beir sizing has been linked to elevated levels c (Armstrong-Stassen, 1997), cortisol and te (Grossi, Theorell, Jurisoo, & Setterlind, 1 diovascular complaints (Zeitlin, 1995), matic complaints (Burke & Greenglass, 2(senteeism (Burke & Greenglass, 2000a), an absence (Kivimäki, Vahtera, Griffiths, Cox, son, 2000).

The present study deals with the health various types of downsizing-related reorga Downsizing can be defined as a conste events centering around pressures toward reductions (Shaw & Barrett-Power, 1997). ing may place demands on the organizati groups, and individual employees, and it ma a process of coping and adaptation. Consi

Raija Kalimo, Finnish Institute of Occupational Health, Helsinki, Finland; Toon W. Taris, Department of Work and Organizational Psychology, Nijmegen University, Nijmegen, the Netherlands, and Department of Social and Organizational Psychology, Utrecht University, Utrecht, the Netherlands; Wilmar B. Schaufeli, Department of Social and Organizational Psychology, Utrecht University, Utrecht, the Netherlands.

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Correspondence concerning this article should be addressed to Toon W. Taris, Nijmegen University, Department of Work and Organizational Psychology, P.O. Box 9104, 6500 HE Nijmegen, the Netherlands. E-mail: t.taris@psych.kun.nl

this view, much research on the effects of downsizing has taken a stress-theoretical approach by using Lazarus and Folkman's (1984) stress–strain–coping paradigm (among others; Begley, 1998; Spreitzer & Mishra, 2000), emphasizing the role of job insecurity and coping behaviors (e.g., Davy, Kinicki, & Scheck, 1997; Grunberg, Moore, & Greenberg, 2001; for a review, see Sverke, Hellgren, & Näswall, 2002). The general (and, admittedly, somewhat oversimplified) conclusion that can be drawn from this research is that downsizing induces feelings of job insecurity, thus increasing stress; this, in turn, leads to a wide range of adverse health effects, *unless* one is an active coper.

The present study examines the effects of various types of downsizings on employee well-being from a slightly different angle. On the one hand, it has been noted that downsizing may result in a higher workload for the survivors (e.g., Burke & Greenglass, 2000a). Indeed, the American Management Association (2000) reported that 79.5% of the job-cutting firms in their survey said that at least part of the work once done by departing workers was transferred to other employees. On the other hand, working harder after downsizing is not necessarily compensated by an increase in one's pay or other (fringe) benefits. A downsizing is usually intended to make the organization more effective and competitive, and this is incompatible with higher wages for the surviving employees.

From this vantage point, previous research has considered only part of the explanation for the relationship between downsizing and employee well-being. Downsizing not only results in job insecurity, leading to elevated levels of stress, strain, and lower well-being, but it may also result in a higher workload for the survivors. In this sense, downsizing leads to a double deterioration of the terms of the psychological contract between the organization and the employee for the latter. The present study was designed to examine the validity of this reasoning, that is, to investigate the effects of past and anticipated future downsizing on various measures of well-being among a sample of 1,297 Finnish workers. In doing so, this study examines the consequences of different types of downsizing for worker well-being, as it would seem likely that different types of downsizing place different demands on workers. Thus, the effects of downsizing on worker stress and well-being may vary with the type of downsizing that takes place.

Well-Being and the Balance Between Give and Take

At the heart of the present study lies the assumption that there is a *psychological contract* between employees and the organization for which they work. This psychological contract can be defined as people's unconscious expectations of an organization to respond to their psychological needs and support their psychological defenses in exchange for meeting the organization's unstated needs (Rousseau, 1995). From employees' perspective, the essential feature of this definition is that they must invest their time, effort, skills, and the like in their jobs to the advantage of the organization, while they are compensated for their efforts in terms of pay, job security, and less tangible rewards such as respect from others.

From a related theoretical viewpoint, *equity theory* also stresses the idea that there should be a balance between what workers invest in their jobs and what they receive in return. In a seminal paper, Pritchard (1969) defined an equitable exchange relationship (e.g., with the organization one works for) as a relationship in which people perceive their outcomes as being commensurate with their inputs. Inequity occurs if one outweighs the other. Previous research has shown that inequity in exchange relationships at work is associated with ill-health (e.g., burnout; Taris, Peeters, Le Blanc, Schaufeli, & Schreurs, 2001), thus underlining the importance of an equitable balance between investments and rewards for worker well-being.

Studies by Burke and Greenglass (2000a) and Parker, Chmiel, and Wall (1997) provide indirect evidence for our assumption that the effects of downsizing on employee well-being may be interpreted in terms of a disturbed balance between investments and rewards. Burke and Greenglass (2000a) reported that nurses working full time showed much stronger reactions to hospital restructuring and downsizing than part-time nursing staff. This fits the reasoning that especially those who invest much in and receive much from their jobs (the full-time staff) have much at stake, meaning that these employees have a higher risk of experiencing adverse health effects than others (the part-time staff). Perhaps more convincingly, Parker et al. (1997) showed that the adverse effects of experiencing a downsizing can be offset by improving work characteristics. Although the participants in their study reported higher work demands (i.e., they had to invest more in their jobs), positive work characteristics such as job autonomy and role clarity also increased (thus, their rewards increased as well). The net effect of downsizing on worker health was zero.

In summary, this study argues that downsizing may imply a one-sided renegotiation of the terms of the psychological contract between the organization and its employees, such that the latter (a) receive less from this relationship and (b) invest more in this relationship. Both processes may result in an imbalance between investments and rewards, which in turn may lead to lower well-being.

Effects of Various Types of Downsizings

Previous research has typically failed to distinguish among different types of downsizings in studying their effects. Many studies simply report on the health effects of reorganizations, not taking into account the possible differences among these. Yet, few researchers would maintain that all types of reorganizations place the same demands on individual workers and that their consequences for worker well-being are the same. Employee well-being will probably more severely be affected by massive layoffs than by not filling vacant jobs. Although many studies have examined the health consequences of various types of downsizing-related reorganizations, as yet no research has compared the effects of different types of downsizings on employee well-being in a single study. It would seem likely that the magnitude of the effect of downsizing on well-being varies positively with the severity of the measures that are implemented, that is, the degree to which employees feel that their investment/reward ratio is disturbed. The present study focuses primarily on the effects of reorganizations involving workforce reductions; but even then various types of reorganizations are possible (e.g., cutting temporary contracts, not filling vacant jobs, and layoffs), which may be assumed to differ in the degree to which they affect survivor well-being.

A further issue that has remained underresearched concerns the effects of past versus future downsizings. The vast majority of research on the link between downsizing and well-being has concentrated on the effects of past downsizing. Often a quasi-experimental pretest–posttest design is used. Depending on the timing of the pre- and posttest, these studies typically show (a) that downsizing leads to elevated levels of stress (if the pretest was conducted before and the posttest after announcing downsizing; e.g., Mohr, 2000) or (b) that the effects of downsizing tend to diminish in time (if the pretest of the study was conducted at the time of announcing or menting a reorganization, and the posttest completion; e.g., Isaksson & Johansson, 200 & Callan, 1997).

Interesting as this research is, it leaves unr the issue of the effects of anticipated *future* d ing on health. Downsizing seldom occurs warning: A company that goes into receivers ally knows a long history of downsizing an reorganizations intended to cut costs (Kets D & Balasz, 1997). The employees of such o tions may anticipate other reorganizations in future, potentially affecting their jobs as well & Bommer, 1999). On the one hand, it wou likely that the anticipation of a forthcoming sizing is more important a stressor than pas sizings, especially if one belongs to the latte vivors. Thus, the effects of anticipated downsizing on well-being may well be *stron* those of past downsizing. On the other hand also be argued that the impact of anticipate sizing on well-being is *lower* than that of pas sizing. While the anticipation of a downsizi increase job insecurity (and, therefore, ill-he will not increase one's workload (as past dow does). Thus, the anticipation of an oncomin sizing will lead to lower rewards (i.e., lo security) but not to higher investments, mean anticipated future downsizing will lead to a verely skewed balance between "give" and than past downsizing. Consequently, it is dif predict which type of downsizing (past vs. will affect worker health more strongly, as counterevidence either way.

The Model to Be Tested

Figure 1 presents the model to be tested in th It is based on the theoretical notions outline and can be considered as a series of theory hypotheses concerning the effects of having enced a downsizing in the past and the anticip future downsizing on well-being. For theoret sons an a priori distinction was made amo sets of outcome variables: (a) strains (emoti haustion and mental health), (b) withdrawa iors (cynicism toward one's job, strain/fa lated absence, and the degree to which en consider early retirement), and (c) prof efficacy.

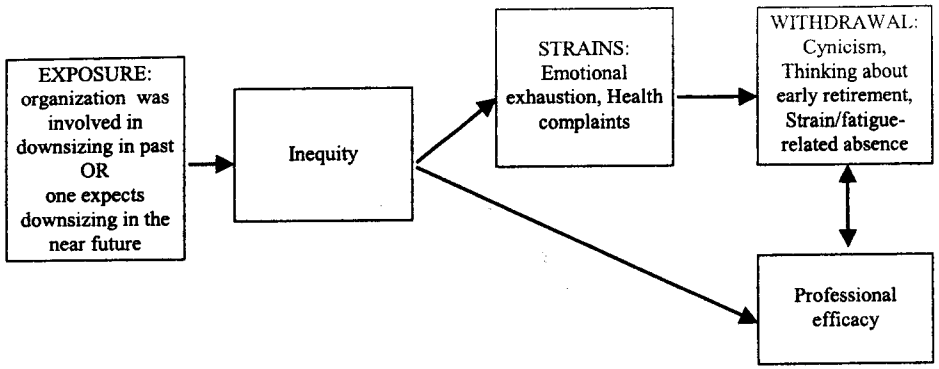


Figure 1. Model for the effects of exposure to past and anticipated downsizing on inequity, strain, withdrawal, and professional efficacy (full mediation model).

Strain and Withdrawal

Lazarus and Folkman (1984) distinguished between two broad categories of job outcomes: strains and withdrawal (coping) behaviors. Paralleling Leiter (1993), the present study assumes that many of the health-related outcome variables that have been studied in relation to downsizing can be classified as either strains or withdrawal behaviors. For example, frequently examined outcomes such as emotional exhaustion, physical well-being, and psychological well-being may be considered strains in that they occur first in response to stressful changes in the work environment. Other outcomes, such as cynicism toward one's job and turnover, can be construed as occurring in response to these strains. By increasing the distance between oneself and the work environment either psychologically (cynicism/depersonalization; Leiter & Maslach, 1988) or factually (turnover), these responses can be considered as ways of dealing with the strain resulting from a stressful work environment (Taris, Scheurs, & Van Iersel-Van Silfhout, 2002).

Within the current theoretical framework, withdrawal (by "distancing" oneself from one's job psychologically) may be one way to deal with an unrewarding exchange relationship with the organization one works for. That is, the organization may demand the employees' unconditional loyalty as part of their psychological contract; the employees, however, might simply refuse to give the organization what it wants, thus restoring the disturbed balance between their investments in and rewards gained from this relationship. For example, absenteeism has been interpreted as one way of dealing with the stress resulting from a disturbed balance between investments and rewards (Geurts, Schaufeli, & Rutte, 1999). Cynicism and depersonalization may be construed as forms of coping, in that the strain resulting from an inequitable exchange relationship may prompt people to withdraw themselves psychologically from that relationship (Leiter, 1993). Similarly, considering early retirement may be construed as a first step leading to withdrawal from the organization.

Note that by using the term *withdrawal* when referring to a diverse set of outcome variables, we do not argue that all sorts of behaviors, motivations, affects, and cognitions are more or less interchangeable variations of the same phenomenon; Johns's (1998) critique of the work of Hanisch and Hulin (1990) on the latter authors' general withdrawal construct has made it abundantly clear that there is good reason to keep empirically and theoretically distinct concepts apart. By referring to diverse outcomes as cynicism, thoughts of early retirement, and strain/fatigue-related absence as psychological withdrawal, we merely intend to use a convenient label for concepts that share the fact that they take a similar place in the theoretical framework of this study. By no means do we want to suggest that these concepts are *interchangeable* or that they reflect withdrawal *exclusively*. For instance, considering early retirement may be a form of organizational withdrawal that is instigated by a disturbed balance between investments and outcomes, but it may also be entirely due to personal circumstances.

Professional Efficacy

Professional efficacy refers to feelings of professional competence and successful achievement in one's work (Schaufeli, Leiter, Maslach, & Jackson, 1996). Some researchers have considered lack of professional efficacy as an outcome in Lazarus and Folkman's (1984) stress–strain–coping–self-evaluation process, such that stress at work leads to strain (exhaustion); strain leads to coping (psychological withdrawal in the form of a distant attitude toward the job—cynicism—or the people one works with—depersonalization); coping, in turn, would be followed by a process of self-evaluation (personal accomplishment). However, this reasoning could not be retained empirically (Lee & Ashforth, 1993; Leiter & Maslach, 1988).

Although professional efficacy apparently does not fit the stress–strain–withdrawal framework outlined above, it is included in the present study as it represents an important dimension of worker well-being. Efficacy (defined as a person's [psychological] ability to cope with problems and act on the environment with at least a moderate amount of success) is a key dimension in both Warr's (1990) model of worker well-being and the general model of well-being developed by Carol Ryff (Ryff & Keyes, 1995; efficacy for one part reflects the self-acceptance dimension in this model, i.e., a positive evaluation of oneself and of one's past life, and for another the environmental mastery dimension, i.e., the capacity to manage effectively one's life and surrounding world).

Thus, professional efficacy is a subjective judgment concerning one's own competence and performance. It may be linked to inequity using Schachter and Singer's (1962) attribution-of-arousal theory. This theory holds that particular stimuli may result in arousal, and that the person interprets this arousal in the light of the situation as interpreted by the person. In the context of equity and stress at work, workers may consider the degree to which they experience stress as a measure of their competence. The fact that a particular exchange relationship is inequitable and leads to stress may lead workers to believe that they are incompetent and that they do not perform well (Taris, Van Horn, Schaufeli, & Schreurs, 2002). If this is correct, there should be a negative association between inequity and professional efficacy.

As Figure 1 shows, inequity is assumed to increase if one's organization has been involved in downsizing or if one anticipates downsizing in the ture. In turn, inequity is expected to elicit stra form of exhaustion and psychological heal plaints, as well as feelings of reduced prof efficacy. Finally, strain (i.e., exhaustion and logical health complaints) is presumed to b ated with elevated levels of strain/fatigue-re sence, cynicism, and thoughts of early retir

Method

Sample

The data were collected in a cross-sectio among a nationally representative Finnish samp ple who were between 24 and 65 years at the st study. The sample initially included both (62.9% of the population in 1997) and not- persons (including 12.7% unemployed persons; Finland, 2001). The data were collected by th national census (Statistics Finland), which has the names and addresses of the Finnish popula of their tasks is to collaborate with researchers providing sampling services), provided that the study meets the criteria formulated by the eth mittee of Statistics Finland.

Statistics Finland mailed the questionnaire pr the researchers to the people in the sample. The naire included scales measuring well-being, bi variables, and perceived inequity. Moreover, t were employed completed a set of questions c their organization's involvement in various do related reorganizations in the past, as well as thei tions regarding future downsizing in their organi

The questionnaire was returned to Statistic where the database was formed. After 1 week, e the sample received a reminder; when 51% of group had responded, those who had as yet n received another reminder, together with a new c questionnaire. Two months after the first contact a satisfactory 66% response rate had been obtai 3,300). Comparison of population characteristic tional sector, gender, and age) with that of t revealed only minor differences (e.g., 51.3% of t population is female vs. 53.3% of the sample). dataset, the participants were selected who had ployed during the 12 months preceding the sur 1,566). After listwise deletion of missing value sample included 1,297 workers (mean age = 4 *SD* = 9.4); 50.7% of the sample was female average amount of work experience was 20.9 ye 9.9).

Measures

Burnout: Exhaustion, cynicism, and profession Burnout was assessed with the Finnish v Schaufeli, Leiter, et al.'s (1996) Maslach Burn tory—General Survey (MBI–GS). Contrary t dard MBI–HSS (for "Human Services Sur MBI–GS was designed to assess burnout in t

working population, including occupations in which contact with other people does not constitute a major part of the tasks. The MBI–GS consists of 16 items divided across three subscales; all items are answered on a scale ranging from 0 (*never*) to 6 (*everyday*). *Emotional exhaustion* refers to feelings of being emotionally overextended and depleted of one's emotional resources. This 5-item scale is similar to the exhaustion scale included in Maslach and Jackson's (1986) MBI. However, contrary to the MBI–HSS, the exhaustion items of the MBI–GS are generic; they refer to work-related fatigue, but without referring to people as the source of those feelings. For example, emotionally exhausted workers report that they feel "emotionally drained" from their jobs. The reliability of this scale (Cronbach's α) was .89. *Cynicism* reflects indifference or a distant attitude toward work; unlike the MBI–HSS, the 5 items of the MBI–GS refer to work itself and not to personal relationships at work (α = .81). Depersonalized workers are not as enthusiastic about their job as they were in the past, and they doubt the importance of their work. Finally, *professional efficacy* is similar to the personal accomplishment scale in the MBI–HSS. This scale taps perceived professional competence and successful achievement in one's work. It is measured by a 6-item scale (α = .83). People with high scores on this scale report that they have accomplished many valuable things in their job, and they feel very self-confident when they are at work. In the present study the scores on the items of this scale were reversed, such that a high score signifies *lack of* professional efficacy. Taris, Schreurs, and Schaufeli (1999) presented an elaborate discussion of the development and validation of the MBI–GS as well as some sample items.

Psychological health. Psychological health was measured using the 12-item version of Goldberg's General Health Questionnaire (GHQ, Goldberg, 1972). The GHQ taps the degree to which people suffer from psychological health complaints, such as difficulties in concentrating (1 = *less often than usual*, 4 = *more often than usual*). The reliability of this scale was .91.

Intention of retiring early. A single item tapped whether the participants had considered early retirement, namely, "Have you been considering retiring before the normal retirement age?" (1 = *no*, 2 = *yes, sometimes*, 3 = *yes, often*, 4 = *I have already sent in an application*).

Strain/fatigue-related absence. Whether the participants had been absent with stress-related complaints during the 12 months preceding the survey was measured by a single item, namely, "Have you been absent from your work during the past 12 months as a result of overstrain or fatigue?" (1 = *no*, 2 = *yes*).

Lack of equity. Worker investments in their work were measured with a single item, namely, "How much do you feel you invest in your work in terms of skills and energy?" (1 = *very little*, 4 = *very much*). Worker rewards were measured by three items: "How much do you feel you get in return from your work in terms of income, job benefits, et cetera?" "How much do you feel you get in return from your work in terms of recognition and prestige?" and "How much do you feel you get in return from your work in terms of personal satisfaction?" (1 = *very little*, 4 = *very much*). Exploratory factor analysis of these three items revealed that the first factor accounted for 61.2% of the variance and that all items loaded acceptably well on this factor (all loadings > .72). The reliability of this three-item scale was .68. Then a measure of lack of equity was created by dividing the participant's score on the investment item by the score on the outcome scale. Scores higher than 1.00 signify that the participants' investments exceeded their rewards (84.6% of the participants); scores lower than 1.00 indicate that the rewards exceeded the investments (5.9% of the participants); and scores equal to 1.00 indicate a perfect balance between investments and outcomes (9.4% of the participants).

Past downsizing. The participants were asked to indicate whether their organization had been involved in any of eight types of downsizing-related reorganizations during the past 12 months. The question was "Has the following happened in your workplace during the past 12 months?" after which eight types of downsizings followed, including whether (a) personnel had been laid off, (b) personnel had been dismissed, (c) personnel had been working less hours, (d) personnel had been forced to work part time instead of full time, (e) vacant jobs had not been filled, (f) temporary contracts had been cut, (g) replacements had not been hired, and (h) personnel had been replaced in units (0 = *no*, 1 = *yes*). Contingent on the type of downsizing, 5.1% to 27.2% of the participants indicated that this had happened in their organization.

Anticipated future downsizing. The participants indicated for five types of downsizings to which degree they felt that these would occur during the present year. Events included were "you must work less hours," "you will be laid off for at least 2 weeks," "you will be dismissed," "you will be moved to other tasks," and "your working hours will be changed against your will" (1 = *certainly not*, 2 = *probably not*, 3 = *probably*, 4 = *certainly*). This variable was then dichotomized, with scores 1 and 2 indicating low likelihood of downsizing and scores 3 and 4 indicating high likelihood of downsizing. Depending on the type of downsizing, 4.0% to 9.5% of the participants considered it likely that this would occur during the next year.

Note that this conceptualization of anticipated future involvement in downsizing is empirically very similar to current measures of job insecurity (which is usually defined in terms of the perceived likelihood of losing one's job or valued aspects of one's job in the near future). Indeed, the items used here may be construed as tapping varying degrees of job insecurity. The important difference with "standard" measures of job insecurity, however, is that our measures allow for a systematic comparison of the effects of *various types* of downsizing rather than of the effects of an overall measure of job insecurity.

Background variables. Finally, the study included measures of the participants' age and gender. These were included as control variables. Table 1 presents the means and standard deviations for the study variables, as well as their intercorrelations.

Statistical Analysis

We included effects of age and gender on all dependent variables while testing the model presented in Figure 1 (for simplicity not shown in Figure 1). Age and gender are often related to the outcome variables studied here. For example, there are age and gender differences in the occurrence of burnout (Taris et al., 2001), while older participants will presumably consider early retirement more often than others. The effects of these variables should therefore be controlled, even more so because these variables may be related to the downsizing variables as well (e.g., older participants may more often expect to be fired during a future downsizing, because they are close to retirement anyway).

Table 1
Means, Standard Deviations, and Correlations for the Study Variables (N = 1,297)

Variable	1	2	3	4	5	6	7	8	9	10
1. Emotional exhaustion	—									
2. Psychological health complaints	.61	—								
3. Cynicism	.56	.56	—							
4. Thinking about early retirement	.30	.25	.28	—						
5. Strain/fatigue-related absence	.23	.22	.16	.11	—					
6. Lack of professional efficacy	.15	.31	.34	.15	.06	—				
7. Inequity	.38	.36	.36	.17	.10	.18	—			
8. Age	.01	.08	.09	.34	.01	.06	−.01	—		
9. Gender (male = 1, female = 2)	.07	.08	−.02	−.07	.05	.01	.04	.01	—	
10. Experienced downsizing in the past	.14	.17	.10	.04	.01	.10	.10	−.01	.02	—
11. Anticipates future downsizing	.19	.19	.18	.09	.04	.04	.12	−.04	.01	.14
M	2.20	2.06	1.80	1.89	1.05	1.13	1.45	41.51	0.51	0.52
SD	1.43	0.48	1.41	0.78	0.22	1.10	0.52	9.37	0.50	0.50

Note. Correlations of .06 and over are significant at $p < .05$.

The data were analyzed using structural equation modeling (SEM; Jöreskog & Sörbom, 1993). Model fit was assessed using several fit indexes, including the chi-square test, the root-mean-square residual (RMR), and the adjusted goodness-of-fit index (AGFI). These fit indexes are rather sensitive to variations in sample size, such that in large samples models rarely fit the data, even if the difference between the "true" model and the specified model is negligibly small (Byrne, 2001). We therefore also considered the nonnormed fit index (NNFI) and the comparative fit index (CFI). These indexes are less sensitive to variations in sample size. Values of .90 and higher (NNFI/AGFI/CFI) and lower than .05 (RMR) signify a good fit.

Mediation effects: Comparison of models. The model presented in Figure 1 assumes that the effects of past or anticipated future downsizing on well-being (the variables included in the clusters of strain, withdrawal, and professional efficacy) run solely via inequity. Further, the effects of inequity on withdrawal are expected to run via strain. Thus, the model in Figure 1 assumes that the effects of downsizing (inequity) on strain/withdrawal/professional efficacy (strain) are *fully mediated* by inequity (strain).

Baron and Kenny (1986) proposed a well-known procedure to test whether the relationship between two variables is mediated by a third variable using regression analysis, involving the estimation of a series of separate regression equations. If variable A is related to B and C, and B is related to C, and the effect of A on C disappears or decreases after controlling B, the effect of A on C is said to be mediated by variable B.

Unfortunately, there is no simple analogue to this procedure in SEM, as here all equations can be estimated simultaneously. That is, using SEM the effects of A and B on C can be estimated at the same time as the effect of A on B. It is thus immediately clear whether B "mediates" the relationship between A and C, and whether there is an additional "direct" effect of A on C. Applying Baron and Kenny's (1986) approach using SEM would therefore seem make little sense. This does not mean, however, that SEM cannot be used to see whether particular relationships between pairs of variables are mediated by other variables. In the present study we test a series of models. Comparing these models will reveal whether the full mediation model presented in Figure 1 applies to the data or that additional paths are needed to obtain an acceptable fit. If the latter is the case, the effects of downsizing on well-being and inequity on withdrawal are not (fully) mediated by the variables included in the model.

The first model to be examined is the full mediation model presented in Figure 1 (M1). This model assumes that the effects of exposure to downsizing on strain, of exposure to downsizing on professional efficacy, of exposure to downsizing on withdrawal, and of inequity on withdrawal are fully mediated by inequity or strain. M1 serves as a baseline model, against which three other, slightly more complex, models are evaluated. Model 2 (M2) is identical to M1, save that direct paths are included from exposure to downsizing on professional efficacy and the two indicators of strain. A significantly better fit of M2 compared with M1 would indicate that the relationship between exposure to downsizing and strain/professional efficacy is *not fully* mediated by inequity, as at least one of the extra direct effects on strain/efficacy is statistically significant. The third model (M3) is identical to M1, save that direct paths are included from inequity on cynicism, considering early retirement, and strain/fatigue-related absence. Again, a better fit of M3 compared with M1 signifies that the relationship between inequity and withdrawal is not fully mediated by strain. Finally, the fourth model (M4) is, again, identical to M1, with the exception of additional direct paths from exposure to downsizing to withdrawal.

Comparison of the fit of M1–M4 will reveal which model accounts best for the data. A particular model is considered to fit the data better than a rival model if its chi-square value is significantly lower ($p < .05$) than that of its competitor

This usually (but not always) coincides with higher values for NNFI, AGFI, and CFI and lower values for the RMR.

Cross-validation of structural equation models. For cross-validation purposes, the present sample (N = 1,297) was split into two subsamples of 648 and 649 participants each. On both subsamples an independent analysis of the model presented in Figure 1 was performed. The results for each sample were then compared to obtain an impression of the degree to which capitalization on chance presented a threat to the validity of the study.

Results

Structural Analyses

Comparison of models: Full mediation? Table 2 presents the fit of the structural equation models tested in the present study. The baseline full mediation model (M1) did not fit the data well, although in both samples AGFI and CFI exceeded .90. NNFI and RMR, however, were below .90 and above .05, respectively. Table 2 shows that Models 2 and 3 (M2 and M3) both improved significantly upon the full mediation model (M1). AGFI and CFI were above .90 in both samples, whereas RMR and NNFI approached—and sometimes exceeded—the cutoff points for acceptable fit. M4, however, did not improve significantly upon M1; the gain in degrees of freedom did not outweigh the increase in chi-square points, while AGFI and NNFI even indicated that this model fitted the data *less* well than M1.

These analyses suggest that the full mediation model presented in Figure 1 needs to be complemented with additional effects of exposure to downsizing on strain/professional efficacy (as included in Model 2) and of inequity on withdrawal (Model 3) to obtain a good fit. The fit of this model (M5) was quite good; only NNFI fell short of .90 in one sample. Therefore, M5 was accepted as the model that accounted best for the data. However, inspection of the parameter estimates and the corresponding T values for this model revealed that several effects did not differ significantly from zero. These were omitted, resulting in Model 5a. As Table 2 shows, the fit of this model was acceptable; AGFI, NNFI, and CFI exceeded .90, whereas RMR was lower than .05 in both samples.

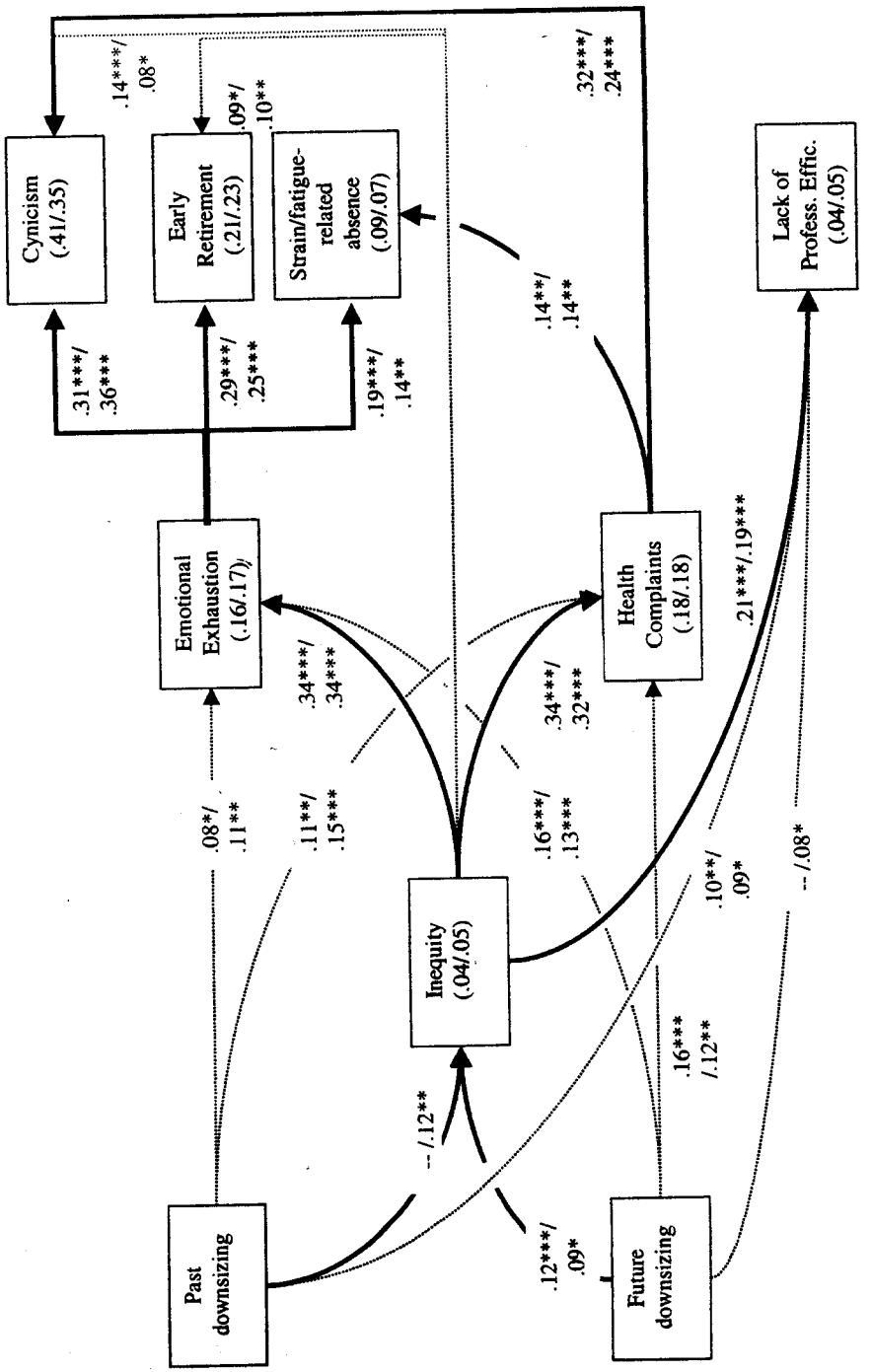
Parameter estimates. Figure 2 presents the standardized parameter estimates for the final (i.e., M5a) models. This figure includes two types of arrows. The solid arrows refer to effects that were already present in the full mediation model M1. The dotted arrows refer to effects that were added in later stages of the analysis (i.e., Models M2–M5). Thus, the dotted arrows refer to effects that should not be present if the effects of past or anticipated future downsizing on well-being (strain, withdrawal, and professional efficacy) and of inequity on withdrawal would have been *fully* mediated by inequity and strain, respectively.

The results were very similar for both sub-

Table 2
Comparison of the Fit of Various Models

Model	χ^2	*df*	AGFI	RMR	NNFI	CFI
Sample 1 (N = 648)						
M1: Full mediation model	106.86	23	.92	.058	.81	.92
M2: M1 + Exposure > Strains/PE	65.52[a]	17	.93	.039	.86	.96
M3: M1 + Inequity > Withdrawal	85.85[a]	30	.93	.052	.83	.94
M4: M1 + Exposure > Withdrawal	101.36	17	.89	.055	.75	.92
M5: M2 + M3	43.05[b]	14	.94	.031	.89	.97
M5a: M5 after deleting nonsignificant effects	59.16[c]	28	.96	.036	.94	.97
Sample 2 (N = 649)						
M1: Full mediation model	77.77	23	.94	.052	.87	.95
M2: M1 + Exposure > Strains/PE	33.46[a]	17	.96	.031	.95	.98
M3: M1 + Inequity > Withdrawal	67.78[d]	20	.94	.048	.88	.95
M4: M1 + Exposure > Withdrawal	72.47	17	.92	.050	.83	.95
M5: M2 + M3	22.80[b]	14	.97	.025	.97	.99
M5a: M5 after deleting nonsignificant effects	31.57[c]	24	.98	.031	.98	.99

Note. AGFI = adjusted goodness-of-fit index; RMR = root-mean-square residual; NNFI = nonnormed fit index; CFI = comparative fit index; PE = professional efficacy.
[a] Model fits significantly better than M1, $p < .001$. [b] Model fits significantly better than either M2 or M3, $p < .001$. [c] Chi-square increase not significant, $p > .05$, as compared to M5. [d] Model fits significantly better than M1, $p > .05$.



samples.[1] As expected, the three withdrawal variables were positively linked to emotional exhaustion: The more exhausted workers were, the more likely it was that they were cynical, were considering early retirement, or had been absent with strain/fatigue-related complaints during the last year (effects ranging from .14 to .36, median value = .25). Similar effects were expected for the number of psychological health complaints. Reporting many psychological health complaints was in both subsamples associated with higher levels of cynicism and strain/fatigue-related absence (effects ranging from .14 to .32). These results thus supported our expectation that strain is associated with withdrawal.

Emotional exhaustion and psychological health, in turn, should vary positively with inequity. As expected, in both samples there were moderately strong effects of inequity on emotional exhaustion and psychological health complaints (standardized effects ranging from .32 to .34), such that higher levels of inequity were associated with higher levels of strain. The last indicator of well-being (lack of professional efficacy) was positively related to inequity: As inequity increased, employees were more likely to question their current work performance (standardized effects of .19–.21).

Experience of past downsizing and the prospect of future downsizing were both related to inequity. Those who reported that their organization had implemented downsizing-related changes across the last 12 months were more likely to report that their investments were higher than their outcomes (a standardized effect of .12 in one sample); similar effects were found for those who expected that such downsizings would be carried out during the next 12 months (standardized effects of .09–.12, $ps < .05$).

These findings are largely in accordance with the model presented in Figure 1. However, the effects of past and anticipated future downsizing on emotional exhaustion/health complaints and professional efficacy were not fully mediated by inequity. The same applied to the effects of inequity on psychological withdrawal; here, too, the full mediation model did not account well for the data. Those who had experienced downsizing in the past or who felt that downsizing might occur in the future reported higher levels of emotional exhaustion and psychological health complaints and lower levels of professional efficacy (effects varying from .08 to .16, median value = .11). Thus, it appears that disturbance of the balance between investments and outcomes accounts only partly for the association between downsizing and lack of well-being.

Similarly, the effect of inequity on psychological withdrawal was not fully mediated by emotional exhaustion and psychological health complaints. Workers who reported elevated levels of inequity considered early retirement more often and were more cynical than others (standardized effects ranging from .08 to .14). Although these effects are relatively weak compared with those on emotional exhaustion and psychological health complaints, they suggest that inequity does not affect withdrawal via elevated levels of strain only.

Finally, the effects of the background variables (for simplicity not shown in Figure 2) on the other variables in the model were generally quite weak. Women were less cynical than men, and they considered early retirement slightly less often than male workers (effects ranging from –.07 to –.11). Further, older employees tended to be more cynical about their work (in one sample, not in the other), considered early retirement more often than others, and reported slightly more psychological health complaints than younger employees.

Well-Being as a Function of Type of Downsizing

In the preceding analyses no distinction was made among the effects of different types of downsizings. The present section therefore focuses on the differential effects of various types of downsizing on the outcome variables in this study.

Past downsizing. Table 3 presents the prevalence of particular types of downsizing-related reorganizations. For example, 17.0% of the participants said that in their organization temporary contracts had been cut during the past 12 months. Further, Table 3

[1] Note that SEM requires all variables to be measured on at least ordinal level. However, the present data set includes three categorical/dichotomous variables (experience of past downsizing, anticipation of future downsizing, and strain/fatigue-related absence), meaning that this assumption is violated. According to Byrne (2001), this may result in inflated chi-square values and parameter estimates that are biased downward, especially if the variables are skewed. The substantive effects of this violation for the present study were therefore further examined. For strain/fatigue-related absence, an additional logistic regression analysis was conducted. The results of this analysis did not deviate substantially from those obtained with SEM. To assess whether the nonnormal distribution of the two "downsizing" variables resulted in biased results, we reconducted the SEM after transforming these variables nonlinearly, thus reducing their skewnesses. Parameter estimates changed somewhat, but the pattern of effects remained the same.

Table 3
Effects of Past Downsizing on Worker Well-Being as a Function of Type of Downsizing

Type of change	Prevalence (%)	Cynicism		Early retirement		Strain/fatigue-related absence		Exhaustion		Health complaints		Professional efficacy		Lack of equity		Overall	Average
		M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	F	D
a	6.2	.13	.09	–.07	–.09	.01	.04	.40	.27	.10	.20	.05	.04	–.05	–.11	1.86	.06
b	5.1	.06	.04	.03	.04	.00	.00	.24	.16	.09	.18	.07	.06	.04	.07	0.45	.08
c	20.4	.16	.11	.04	.05	–.01	–.05	.18	.13	.09	.18	.16	.15	.06	.11	1.57	.10
d	13.4	.35**	.25	–.03	–.04	–.03	–.15	.35**	.24	.15***	.30	.20*	.19	.04	.07	3.93***	.11
e	17.0	.05	.03	.05	.06	.03	.14	.33**	.23	.11**	.22	.09	.08	.09*	.16	2.93**	.13
f	27.2	.31***	.22	.13**	.17	.00	.00	.24**	.17	.14***	.29	.23**	.21	.13***	.24	5.12***	.19
g	7.6	.29*	.20	.03	.04	.01	.04	.58***	.40	.18**	.23	.12	.11	.16**	.29	2.88**	.19
h	18.5	.26**	.18	.09	.12	.02	.08	.44***	.30	.17***	.35	.28***	.25	.12**	.21	5.21***	.22
Average D			.14		.05		.01		.24		.24		.14		.13		.14

Note. Group a: did not experience this type of downsizing; Group b: did experience this type of downsizing. A positive difference indicates lower well-being for Group b. Univariate comparisons, $dfs = 1, 1295$; multivariate comparisons, $dfs = 7, 1289$. For type of change: a = personnel has been working less hours, b = personnel has been forced to work part time instead of full time, c = personnel has been replaced in units, d = personnel has been dismissed, e = temporary contracts have been cut, f = vacant jobs have not been filled, g = personnel has been laid off, h = replacements have not been hired.
* $p < .05$. ** $p < .01$. *** $p < .001$.

presents for each downsizing–outcome combinat the difference between the average scores of th who said that this type of downsizing had not curred in their organization (Group a) and those w indicated that this reorganization had occur (Group b). Finally, for each downsizing–outco combination Cohen's (1988) effect size D is p sented. D is computed as the difference between t means, divided by their standard deviation. A corr tion factor is applied if these standard deviati differ across groups. D does not depend on sam size (as, for example, the F test does) and does depend on the range of the variable of interest (as difference between these means does). Thus, D v ues can easily be compared and interpreted. Acco ing to Cohen (1988), D values lower than .50 sign weak effects, values ranging from .50 to .80 den moderately strong effects, and values of .80 and o indicate strong effects.

The last column in Table 3 presents the D value each type of downsizing, averaged across all dep dent variables. The first 5 D values (correspond with downsizings involving personnel being for to work less hours; personnel being forced to w part time instead of full time; personnel being placed in units; personnel that has been dismiss and temporary contracts that were cut) are all v low (<.14). Thus, although there may be statistic significant differences between those who did those who did not report these downsizings for sc or all outcome variables, these effects are of no g concern when considering their practical relevai The remaining types of downsizings are more imp tant, as suggested by slightly higher overall D val Considering these effect sizes, it seems that downsizings have little effect on survivor well-be and that downsizing that involve workers being off, not filling vacancies, and not hiring replacem have more profound effects on well-being than o types of downsizings.

The bottom row of Table 3 presents the averag values for each outcome variable, averaged acros downsizings. These D values present an indicatio the sensitivity of the outcome variables to the oc rence of various types of downsizings. The two st variables (emotional exhaustion and general he are most sensitive to downsizing (albeit D value .24 are still only "weak," according to Cohen, 19 The effects on the other outcome variables are weaker, down to values of .05 (early retirement) .01 (strain/fatigue-related absence).

Future downsizing. The effects of various a ipated downsizings on employee well-being are

sented in Table 4. Again, this table presents differences between means and D values for each downsizing–outcome combination. The average D values for the various downsizing-related reorganizations are considerably higher than in the previous analyses (ranging from .20 to .46). Table 4 shows that there are three distinct groups of anticipated reorganizations in terms of their effects on the outcome variables. The first group consists of downsizings that involve working less hours and being moved to other tasks (average Ds are .20 and .26, respectively; anticipation of these downsizings has little effect on worker well-being). The second group consists of being laid off for at least 2 weeks or working hours that are changed against one's will (Ds were .31 and .38; anticipation of these measures has somewhat stronger, albeit still weak effects on worker well-being). Finally, anticipating that one will be dismissed during the next year has a quite substantial effect on worker well-being, as evidenced by a D value of .46.

Inspection of the average D values for each outcome variable reveals that the two strain variables are strongly affected by the anticipation of various downsizings (average Ds are .44 for emotional exhaustion and .53 for psychological health complaints). However, cynicism is affected even more strongly (D = .50). Again, the sensitivity of strain/fatigue-related absence and early retirement regarding the effects of various anticipated downsizings is relatively low.

Table 4
Effects of Anticipated Future Downsizing on Worker Well-Being as a Function of Type of Downsizing

Type of change	Prevalence (%)	Cynicism		Early retirement		Strain/fatigue-related absence		Exhaustion		Health complaints		Professional efficacy		Lack of equity		Overall	Average
		M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	M_b–M_a	D	F	D
a	4.9	.56*	.37	.06	.08	.01	.04	.47**	.32	.24***	.57	−.16	−.16	.11	.19	4.02***	.20
b	6.9	.63***	.45	.18*	.22	.03	.13	.62***	.41	.13*	.25	−.06	.06	.15**	.28	3.80***	.26
c	5.6	.74***	.62	.07	.09	−.01	−.05	.44*	.29	.25***	.50	.01	.01	.09	.17	4.35***	.31
d	9.5	.66***	.47	.25**	.32	.02	.09	.69***	.49	.27***	.56	.30	.27	.22***	.43	8.48***	.38
e	4.0	.89***	.60	.45**	.52	.03	.13	1.08***	.69	.40***	.78	.01	.01	.29***	.46	7.19***	.46
Average D			.50		.25		.07		.44		.53		.04		.31		.32

Note. Group a: does not expect to experience this type of downsizing; Group b: expects to experience this type of downsizing. A positive difference indicates lower well-being for Group b. Univariate comparisons, dfs = 1, 1295; multivariate comparisons, dfs = 7, 1289. Type of change: a = work less hours, b = you will be moved to other tasks, c = you will be laid off for at least 2 weeks, d = your working hours will be changed against your will, e = you will be dismissed.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Involvement in Downsizings and Perceived Investments/Rewards

The present study argued that past and anticipated future downsizing imply a one-sided renegotiation of the terms of the psychological contract between organization and employee. The latter may have to work harder (i.e., their investments in their work are higher than for those who were not affected by a downsizing) while their rewards actually become lower (one's position may, for instance, be less secure than one initially expected it to be). This implies that workers who have been or expect to be affected by a downsizing may feel that they invest more in and receive less rewards from their work than others. To examine this reasoning, for each type of past downsizing, we conducted a 2 (occurrence: occurred vs. not occurred) × 2 (type: investments vs. rewards) analysis of variance (ANOVA), with type as a within-participants variable. Similar 2 (anticipation: will occur vs. will not occur) × 2 (type: investments vs. rewards) ANOVAs were conducted for each type of anticipated downsizing, with type as a within-participants variable. Table 5 presents the results of these analyses.

For all analyses a strong main effect of type was observed (Fs ranging from 403.58 to a massive 1,578.39, all $ps < .001$); on average, the participants felt that they invested more in their jobs than they received in return. Further, in 6 out of 13 cases we found a significant main effect of occurrence/anticipation (the interpretation of this effect is difficult and irrelevant for our purposes). The proof of the pudding lies in the Occurrence (Anticipation) × Type interaction effect. Confirmation of our hypotheses requires that the difference between investments and rewards be larger for those who experienced or who expected to experience a downsizing than for those who did not (expect to) experience a downsizing. The Occurrence (Anticipation) × Type interaction effect was significant in 6 out of 13 cases. As these tests are not statistically independent (there are usually significant associations among the variables measuring involvement in reorganizations; i.e., participants who indicate that temporary contracts were cut in their organizations often also report that vacant jobs were not filled, and so on), these results cannot be interpreted as cumulative support for our hypotheses. Nevertheless, our analyses provide some indication of the magnitude of the effects of involvement in various types of downsizings.

When a significant Type × Involvement (or Type × Anticipation) interaction effect was observed, tests for simple main effects were conducted. In neither of the six cases in which such an interaction effect was found was there a main effect of involvement or anticipation for the investments (Fs ranging from .03 to 1.57, all $ps > .05$). Thus, contrary to our expectations, there was no evidence for the assumption that those who experience a downsizing or who expect to experience a downsizing feel they invest more in their work than others. In contrast, in five instances we found a significant difference between the perceived rewards for those who were and those who were not involved in a downsizing. Participants who said that in their organization vacant jobs had not been filled or that replacements had not been hired, and participants who expected that they would be dismissed, moved to other tasks, or expected their working hours to be changed against their will, said they received fewer rewards than others, Fs(1, 1295) ranging from 9.88 to 39.32, all $ps < .01$.

Consistent with these findings, further analysis revealed that the correlations between past and ant pated downsizing on the one hand and work inv ments on the other were negligibly small (rang from −.01 to −.03, $ps > .05$). In contrast, the co lations between past and anticipated downsizings work rewards were statistically significant (−.12 −.18, respectively, $ps < .001$). Thus, it seems work rewards in particular were diminished by and anticipated downsizing rather than that own vestments increased.

Relationship Between Number of Downsizi and Outcome Variables

Finally, we examined how the occurrence of *tiple* past downsizings or anticipated future dow ings affected the outcome variables. It is conceiv that the effects of past or future downsizing bec more pronounced when one has already beer volved in other downsizings. Thus, two vari were created that represented the number of t one's organization had been involved in past d sizing and the number of anticipated f downsizings.

The correlation between these two variables .15. Although this correlation is statistically si cant at $p < .001$, a shared variance of 2.3% m that for practical purposes the effects of these ables can be considered as if they were indepen In particular, emotional exhaustion, cynicism, the number of psychological health complaint creased if one had experienced multiple downs in the past or if one expected multiple downsizi the near future, whereas one's perceived rev decreased (correlations ranging from .10 to .1 $ps < .01$). No (consistent) effects were found f other outcome variables.

Finally, we examined whether employees wh experienced downsizing in the past were more atively affected by the anticipation of future d sizing than others. That is, was there a *cumu* effect of anticipated repeated exposure to work changes in conjunction with the experience o reorganizations? A 2 (occurrence: occurred v occurred) × 2 (anticipation: will occur vs. wi occur) multivariate analysis of variance with th come variables (exhaustion, health complaint three withdrawal-related variables, and lack o fessional efficacy) as the criterion variables wa ducted to address this issue. This analysis revea significant multivariate interaction effect of h experienced a downsizing in the past and the

Table 5
Mean Scores (and Standard Deviations) for Investments and Outcomes as a Function of (Anticipated) Occurrence of a Downsizing and Type of Downsizing

Type of downsizing	Occurrence of downsizing				*F* value for effect of:[a]		
	Occurred		Not occurred			Type: Investments vs. rewards	
	Investments	Rewards	Investments	Rewards	Occurrence		Interaction
Past downsizing							
Personnel laid off	4.14 (0.78)	2.84 (0.81)	4.03 (0.74)	3.00 (0.79)	< 1.00	627.67***	7.29**
Personnel dismissed	3.97 (0.85)	2.88 (0.83)	4.05 (0.72)	3.00 (0.78)	4.23*	868.61***	< 1.00
Shorter week	3.93 (0.79)	2.93 (0.74)	4.05 (0.74)	2.99 (0.79)	1.52	403.58***	< 1.00
Full time to part time	4.06 (0.78)	2.97 (0.90)	4.04 (0.74)	2.99 (0.79)	< 1.00	365.24***	< 1.00
Vacant jobs not filled	4.00 (0.78)	2.81 (0.82)	4.06 (0.72)	3.05 (0.77)	14.89***	1578.39***	11.04**
Temporary contracts cut	4.05 (0.81)	2.91 (0.87)	4.04 (0.72)	3.00 (0.78)	< 1.00	1087.65***	< 1.00
Replacements not hired	4.04 (0.79)	2.79 (0.74)	4.04 (0.73)	3.03 (0.80)	7.55**	1274.68***	13.64***
Persons replaced in units	3.96 (0.78)	2.88 (0.82)	4.06 (0.73)	3.01 (0.78)	8.13**	1202.35***	< 1.00

Type of downsizing	Anticipation of future downsizing				*F* value for effect of:[a]		
	Will occur		Will not occur			Type: Investments vs. rewards	
	Investments	Rewards	Investments	Rewards	Anticipation		Interaction
Future downsizing							
Shorter work hours	4.06 (0.84)	2.83 (0.76)	4.04 (0.74)	2.99 (0.79)	< 1.00	393.71***	2.56
Laid off for at least 2 weeks	3.99 (0.85)	2.79 (0.74)	4.05 (0.73)	3.00 (0.79)	3.13	433.71***	1.92
You will be dismissed	4.14 (0.74)	2.64 (0.77)	4.04 (0.74)	3.00 (0.79)	2.18	407.41***	13.08***
You will be moved to other tasks	4.02 (0.71)	2.73 (0.80)	4.04 (0.74)	3.00 (0.79)	4.59*	570.88***	6.64**
Working hours changed against will	4.02 (0.77)	2.63 (0.68)	4.04 (0.74)	3.02 (0.80)	12.60***	824.82***	18.56***

[a] All *F* values, *df*s = 1, 1295.
* $p < .05$. ** $p < .01$. *** $p < .001$.

pation of a downsizing in the near future. Thus, the health consequences of anticipated downsizing do not differ as a function of the degree to which workers experienced earlier downsizings.

Discussion

This study focused on the effects of past and anticipated future downsizing on well-being and on inequity as a possible mediator of this relationship. Downsizing may have adverse health effects, but whereas many authors have pointed to job insecurity as the key variable in the psychological process linking downsizing to well-being, others have suggested that downsizing leads to higher job demands for the surviving employees as well. Thus, the terms of the psychological contract between the employee and the organization become less favorable for the employee, not only because the rewards gained from the organization tend to decrease (lower job security) but also because employees must invest more in their jobs (i.e., they have to work harder). This reasoning suggests that interpreting the relationship between downsizing and well-being in terms of diminished job security only is too sparse an explanation: An equity perspective may cover the underlying psychological process more fully, at least for the effects of past downsizing. The equity perspective may be less valuable in interpreting the effects of anticipated future downsizing, as employee investments will not increase when one expects a downsizing to occur. Thus, future downsizing should not lead to as skewed a balance between investments and rewards as past downsizing.

Consistent with this reasoning, we expected that past and anticipated future downsizing would lead to a disturbed balance between investments and outcomes. This was expected to lead to elevated levels of stress and strain (i.e., emotional exhaustion and lack of psychological health), in turn resulting in psychological withdrawal (strain/fatigue-related absence, thinking about early retirement, and cynicism). The results largely supported these expectations. We found that having experienced a downsizing in the past or the anticipation of a downsizing in the future was indeed associated with a disturbed balance between work investments and work outcomes, and that such a disturbed balance was associated with elevated levels of emotional exhaustion and psychological health complaints and lower levels of professional efficacy.

Our analyses revealed that there were direct effects of past and anticipated future downsizing on strain and efficacy as well, however. Thus, contrary t expectations, inequity did not fully mediate relationships. Other variables that were not inc in the present study may also partly be respor for the association between downsizing and s For example, negative affectivity may infl one's estimation of the likelihood of future dov ing, as well as the degree to which one reports ings of emotional exhaustion, psychological l complaints, and lack of efficacy. Similarly, downsizing may not only result in job inse (and, thus, lower job rewards) but also in leading to elevated levels of emotional exha and psychological health complaints.

As expected, emotional exhaustion and psycl ical health complaints were associated with inc in cynicism, strain/fatigue-related absence thoughts about early retirement (Leiter & Ma 1988). These findings suggest that workers w perience strain due to a disturbed balance be the investments in and the rewards gained fr exchange relationship will consciously or sciously try to restore this balance by dist themselves from this relationship, thus reducin own investments (Taris et al., 2001). Howeve that other processes may also account for thes ciations; for example, high strain may well l sickness absence.

The results revealed that the relationship b inequity and withdrawal was not fully m through strain. Again, other variables that included in the present study may account remaining direct effects of inequity on with For instance, previous research has revealed equity is not only related to strain but also to commitment to the organization (Schaufel Dierendonck, & Van Gorp, 1996). Lack of or tional commitment would seem a likely precu elevated levels of cynicism and thoughts abo retirement.

Type of Downsizing

One shortcoming of previous research is tl ally only a single type of downsizing was cor and the study of different types of anticipate downsizings has been largely neglected. The research studied the relative impact of vario of downsizings on employee well-being, from the assumption that not all types of dow place the same demands on individual work strength of their effects on well-being was e to vary positively with the severity of the con

ing measures, that is, the degree to which employees' investment/reward ratio was threatened. Our results provided some support for this reasoning. The effects of downsizings involving the elimination of jobs (e.g., by cutting temporary contracts, layoffs, or not hiring replacements) on well-being were somewhat stronger than the effects of other types of downsizing-related reorganizations. However, it should be noted that the impact of virtually all types of (past and future) downsizings was small, with the possible exception of the prospect of dismissal in the near future. This result, again, underlines the importance of job insecurity as a potential stressor. In this respect it is noteworthy that follow-up analysis revealed that the association between inequity and past or anticipated future downsizings was mainly due to the fact that the participants felt that they received less rewards, rather than that they had to invest more. This pattern of effects is consistent with the notion that especially resource loss is an important stressor (Wells, Hobfoll, & Lavin, 1999).

Study Limitations

One limitation of the present study is that the downsizings included in this research represent a limited subset drawn from a wide range of possible organizational changes. That is, other and very different types of downsizing-related reorganizations might have been included in this study, and the possibility that the results obtained for these other types of downsizings might turn out differently cannot be ruled out. Be that as it may, the present study reveals that different downsizings are differentially related to worker well-being. Further, note that some of the downsizings included in this study do not necessarily imply workforce reduction. For example, the items used in the present study to measure the incidence of downsizing in organizations did not allow us to distinguish between layoffs with the aim of workforce reduction and more or less incidental dismissals due to poor performance of individual employees who are replaced by other, more capable workers. In the latter case no detrimental effects on worker health and inequity are expected. This implies that the error on our measures of downsizing increases, leading to an underestimation of the effects of downsizing on inequity and the outcome variables.

Further, this study used a cross-sectional design, with self-report data only. One obvious drawback of a cross-sectional design is that it is impossible to test causal relationships. In this light, it would seem possible that strain, cynicism, and the like could lead people to be more pessimistic in their beliefs concerning the likelihood of future involvement in downsizing. Thus, the likelihood of being involved in future downsizing may be a *consequence* of strain, rather than an antecedent.

A possibly even more important drawback of this design is that the results reported here may have been confounded with a selection effect that could not be controlled, as would have been possible if the design had included a pretest. The participants in this study are those who "survived" past downsizings. It would seem possible that downsizings provide organizations with an excuse for retaining their motivated and productive employees while getting rid of others (e.g., older employees who are cynical, who suffer from many psychological health complaints, and who are often absent). If anything, such a restriction of range would mean that the variance of the variables in this study has been underestimated, leading to a conservative estimation of their effects: In particular, the explanatory power of having experienced a downsizing in the past may have been underestimated. The fact that only self-report data were used implies that the associations among especially the outcome variables and inequity have been overestimated, due to common method variance or the wish to answer consistently (Conway, 2002). It would seem important for future research to examine whether the present findings for the effects of past and anticipated future downsizing can be replicated using objective stress measures (e.g., cortisol and testosterone level, Grossi et al., 1999; or objectively recorded absenteeism, Burke & Greenglass, 2000a).

Moreover, note that some of the outcome variables used in this study were measured with a single item (strain/fatigue-related absence, intention of retiring early, or worker investments), meaning that it was impossible to judge the reliability of these measures. Furthermore, strain/fatigue-related absence was measured rather crudely, using a two-category response scale only, whereas the answers to this measure are likely to be influenced by social desirability processes: Many people will not admit to being sick because of strain or fatigue. These problems will increase the error variance for these measures, meaning that their effects will be underestimated and that the proportion of variance explained for these variables will be low. Figure 2 reveals that this possibility is not imaginary: The proportions of explained variance for strain/fatigue-related absence and inequity (of which worker's investments were a constituent part) were relatively low, suggesting that unreliability and crude measurement may have been a problem in this study.

Further, note that the design of the present study was necessarily limited in terms of the number of concepts measured. This implies that several interesting (and possibly important) concepts could not be measured. For example, it would seem likely that a dispositional variable such as negative affectivity influences workers' perceptions of the likelihood of future downsizing, while this concept may also be related to the strain outcomes included in this study.

Finally, the present study examined the effects of downsizing in one particular national setting (i.e., Finland). This could imply that it might be hard to generalize the results of this study to other national settings, as the incidence of downsizing could be different in Finland than in other settings. There is some reason to believe that this reasoning applies. For instance, whereas 29% of the American employees reported that it was somewhat or very likely that they would lose their current job in the next couple of years (Bond et al., 1998), only 8% of the Finns feared to be dismissed during the coming year, while only 13% worried about possible layoffs (Finnish Ministry of Labor, 2001). This suggests that downsizing is much more prevalent in the United States than in Finland. One possible explanation is that in Finland (as in other Scandinavian and West European countries such as Sweden and the Netherlands), it is legally much more difficult (and expensive!) for employers to dismiss part of their personnel for reasons of optimizing business processes and increasing profits than in an archetypically capitalist country such as the United States.

As regards the generalizability of the present findings to other national contexts, this reasoning might lead one to expect that the impact of experiencing a downsizing on well-being is greater in Finland than in the United States; after all, downsizing is not an everyday-occurring phenomenon in Finland, and examples of persons who easily found a new job after being dismissed during downsizing might be rare. Thus, downsizing could instigate relatively high levels of stress and strain among Finns, and the magnitude of the association between downsizing and stress/strain could also be stronger for Finns than for U.S. citizens. Note, however, that earlier research has shown that even U.S. citizens experience stress and strain after downsizing (among others; Burke & Greenglass, 2000b). Thus, there is little reason to expect that the present set of findings is unique to Finland; the present results concerning the relationship between downsizing, strain, and outcome variables can presumably largely be generalized to oth national contexts.

Practical Implications

Our results, although preliminary and with limi tions, have practical implications for stress preve tion during organizational change. If anything, c findings suggest that downsizing tends to cause str among the workers, whether or not they themsel will directly be affected by a reorganization. In p ticular, the effects of anticipated future downsizi on worker well-being were relatively strong, e though it was not certain that they would persona be affected by a future downsizing. This suggests t even rumors about possible downsizing may h detrimental effects on employee well-being, whet or not they are actually involved in these down ings. Given the possible adverse effects of lo employee well-being for the organization (e.g., work motivation, high turnover rates, high str fatigue-related absence), it would seem to be in organization's interest to inform their personne soon and as detailed as possible about oncon organizational changes in general and downsizing particular, and their implications for the organiza and individual workers.

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