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Work Characteristics and Employee Well-Being Within a Context of Strategic Downsizing

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Findings from this 4-year longitudinal study of strategic downsizing suggest that introducing deliberate work organization and change management strategies can combat the negative effects of reduced head count. Results showed that there was no overall decrease in well-being from before to after downsizing for the 139 employees remaining in an organization, despite an increase in work demands. The potential detrimental effect of demands appears to have been offset by improvement in work characteristics arising from initiatives introduced as part of the downsizing strategy. This interpretation is consistent with analyses at the individual level, which showed that high demands were associated with poorer well-being but that increases in control, clarity, and participation were associated with improved well-being.

There are considerable turbulence and change within modern organizations that raise unanswered questions about the consequences for employee well-being. One trend that is increasingly prevalent is downsizing. In response to environmental pressures, or as part of strategic efforts to meet future challenges, many organizations are reducing the size of their workforce. For example, a survey of firms employing more than 5,000 people, conducted by the American Management Association, found that two thirds had downsized during the latter half of the 1980s (Greenberg, 1988), and five out of every six companies covered by the Laborforce 2000 study had shed labor from the mid-1980s to the early 1990s (Marks, 1993). Clearly, such downsizing has major psychological implications, both for those who lose their jobs as a consequence and for those who remain in the organization.

In this article we investigate the effects of downsizing for employees who remain in the organization. However, we take a different approach than past research on this topic. Our focus is not on survivors' immediate reactions to their colleagues' job loss (such as feelings of guilt or insecurity) but on the longer term implications of strategic downsizing for employee well-being as a function of its effects on work characteristics. We suggest that the overall effect on well-being will depend on the accompanying changes in work characteristics that are in part a function of downsizing itself and in part a reflection of the way it is implemented.

Existing Research on Employee Well-Being and Downsizing

A widely held view is that there are severe effects of downsizing on "surviving" employees. For example, in a recent newspaper article titled "The Misery of Keeping a Job," MacErlean (1995) characterized the situation as one in which employees "will lose trust in the organization, will feel less loyalty, will enjoy work less . . . and will perform worse at work" (p. 13). Terms such as *survivor sickness* and *survivor syndrome* reflect this belief.

To a large degree, research on downsizing supports the popular view. Several studies of survivors suggest that they have decreased job satisfaction, lowered organizational commitment, greater strain, and are more likely to leave or be absent from work (Brockner, 1988; Brockner, Grover, Reed, DeWitt, & O'Malley, 1987; Davy, Kinicki, & Scheck, 1991; Wong & McNally, 1994). Moreover, the perceived fairness of the procedures used to select the employees who are to be laid off (procedural justice) has been found to moderate such effects (Brockner et al., 1994; Brockner, Weisenfeld, & Martin, 1995). Other work has explored issues such as: how coping strategies and self-esteem may moderate the psychological effects of downsizing (Armstrong-Stassen,

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1994; Brockner, Davy, & Carter, 1985; Mone, 1994), how perceptions of job insecurity might influence outcomes such as work effort (Brockner, Grover, Reed, & DeWitt, 1992), and the impact of downsizing on survivors' commitment to trade unions (Mellor, 1992).

Longer Term Implications of Downsizing for Jobs and Employees

Our focus in the present article differs from most of the research in this area to date. The above investigations focused largely on survivors' immediate reactions to their colleagues' job loss, whereas we are concerned with the longer term effects of downsizing on employees' well-being and job content. This difference in approach reflects our interest in *strategic downsizing* rather than *reactive downsizing*. We describe this distinction in more detail.

Although the instances of downsizing described in the literature lack sufficient information to characterize them definitively as such, they appear to represent a reactive form of downsizing rather than a strategic one. *Reactive downsizing* refers to reductions in the workforce undertaken mainly in response to external events and short-term need, typically for reasons of cost containment (Kozlowski, Chao, Smith, Hedlund, & Walz, 1991; Kozlowski, Chao, Smith, & Hedlund, 1993). Thus it "is conducted without concern for process and outcome consistency with business strategy, mission and goals, or with requisite organizational culture and values" (Kozlowski et al., 1993, p. 306). Moreover, being a short-term response to relatively immediate needs, reactive downsizing is "generally associated with little effort to maintain critical competencies, the use of more drastic methods to accomplish downsizing, and more negative impacts on personnel" (Kozlowski et al., 1993, p. 307). A typical example is when a company has a diminishing number of orders and lays off employees accordingly. Research on such instances of downsizing has been quite legitimately influenced by the link to compulsory redundancies and, as such, has focused on how such factors as the threat to individual jobs and the degree of fairness by which the process is managed affect survivors' subsequent attitudes and behavior (e.g., Brockner et al., 1994). Similarly, given the evidence that suggests that reactive downsizing is the most common form (Cameron, Freeman, & Mishra, 1991; Harback & Craft, 1991), it is not surprising that most research has focused on this type.

A contrasting and largely neglected form of downsizing, however, is that of *strategic downsizing*. This form of downsizing reflects a process that is "well-articulated and designed to support the long-term organizational strategy" (Kozlowski et al., 1993, p. 268). Thus it is a planned approach that aims to promote organizational benefits while minimizing negative individual impact. Although the strategy involves the shedding of labor, as a result of the fact that this can be planned ahead of time and often without recourse to compulsory redundancies, downsizing can be achieved gradually. Moreover, it often involves changes to the responsibilities of the employees who remain. Hitt, Keats, Harback, and Nixon (1994, p. 18) referred to a long-term process of "rightsizing," in which the organization reduces the size of the workforce but simultaneously protects core competencies by emphasizing teamwork, training, and leadership.

In terms of this article, a particularly important feature of strategic downsizing is that it is strongly linked to human resource management interventions that aim to "minimize negative impacts whilst meeting organizational requirements, selecting individuals in such a manner as to preserve superior skills and yet maintain equity, and providing support and assistance for those who are terminated and those who remain" (Kozlowski et al., 1993, p. 306). This means that, because the size of the workforce is typically reduced through planned methods aimed at minimizing negative impact, job security and procedural justice are not likely to be the only or even the main psychological considerations. Rather, the research agenda should include consideration of the strategic nature of such change. We turn now to look at research that relates to this type of downsizing.

Strategic Downsizing, Work Characteristics, and Well-Being

There is a range of different strategies that can be used to bring about strategic downsizing, from introducing new employment policies (e.g., increasing part-time work, hiring temporary staff) to changing organizational structures (Kozlowski et al., 1991). One core strategy, and the type we focus on in this article, is to become more competitive by using labor more flexibly and in more cost-effective ways. A given amount of work and responsibility is distributed across fewer employees, often under the banner of such notions as "empowerment" and "lean production." Womack, Jones, and Roos (1990) described a key feature of lean production as a system that "transfers the maximum number of tasks and responsibilities to those workers actually adding

value" (p. 99). In such cases, the factors most likely to determine the effect on employees have to do with the impact of the downsizing on the nature of people's jobs and responsibilities and with the way change is managed.

Although there is little research that has addressed downsizing from this perspective, the few studies that are available highlight the importance of job factors. In an empirical study, Tombaugh and White (1990) found that whereas management saw downsizing as involving increased responsibility and decision making, employees reported increases in role overload, role conflict, and role ambiguity. This resonates with concerns that lean production, empowerment, and such initiatives, though ostensibly intended to lead to greater autonomy for employees, might in practice be vehicles for increasing work demand or workload (e.g., Turnbull, 1988). On the other hand, in a labor-process analysis of recent developments in mill and mine operations, Russell (1995) concluded that one of the main outcomes of downsizing has been job expansion and an increase in job responsibility. Similarly, Cargille (1995) reported that the effect of downsizing within libraries was to create more diverse jobs with greater responsibility, and Bennett (1990) described a situation in which employees had greater responsibility and less supervision after downsizing.

Although the above studies point to the potential importance of work characteristics in understanding the psychological implications of strategic downsizing, they do not provide a coherent picture. Some studies suggest effects that would be expected to be detrimental to employee well-being, such as increased demand; other studies show effects that should benefit employee well-being, such as greater variety and autonomy. Moreover, the research base is a very small one. In this article we therefore aim to go some way toward addressing the implications of strategic downsizing for work characteristics and employee well-being.

Research Questions Addressed in the Present Study

We examined a situation involving downsizing that was accompanied by an empowerment philosophy; that is, the company had a long-term objective to reduce head count while simultaneously enhancing the work characteristics of remaining employees. Because the company made clear efforts to proactively minimize negative effects for employees while obtaining organizational benefits, we refer to this situation as one of strategic downsizing. Through our long-term involvement with the company, we were able to obtain before-and-after measures of work characteristics and well-being rather than having to rely on retrospective accounts.

We addressed three research areas: the effect of strategic downsizing on work characteristics, the effect of strategic downsizing on well-being, and the extent to which well-being is mediated by change in work characteristics during the downsizing. Central to these issues is the selection of relevant work characteristics. Clearly, it is impossible to know in advance which aspects will be important, and it is equally impractical to measure all possible changes. Therefore, in this study we concentrated on those aspects that are most important in light of past literature and that are central to testing the issues we have raised.

First, we examined change in *demand.* One implication of strategic downsizing is that, because the number of employees required for a given amount of output is reduced, there may be increased demands per person. In other words, although some labor savings may be achieved through elimination of unnecessary work or introduction of automated technology, it is likely that demands will increase for many employees. Demand was therefore an important dimension to include, especially given consistent evidence that there is a relationship between high demand and strain and ill health (e.g., Cooper, 1987; Warr, 1987). Demand is one of the two key work aspects included in the demand–control model of work stress (Karasek, 1979; Karasek & Theorell, 1990).

A second core job characteristic concerns the discretionary aspect of work, or the amount of *control* people have within their jobs. Control has been identified as one of the most important motivational aspects of work in job design theory (e.g., Hackman & Oldham, 1976, 1980; Turner & Lawrence, 1965) and is the second core work aspect of the demand–control model of stress (Karasek, 1979). Meta-analyses and reviews have shown strong and consistent relationships between control over work aspects and outcomes such as job satisfaction and well-being (e.g., Spector, 1986; Stone, 1986; Wall & Martin, 1987).

In addition to demand and control, we examined two variables that have been identified as particularly important during times of organizational change: *clarity* and *participation in change.* Turning to the first of these, a lack of clarity about roles and responsibilities has consistently been linked to strain,

dissatisfaction, and a lack of organizational commitment (Jackson & Schuler, 1985; Kahn, Wolfe, Quinn, & Snoek, 1964). Moreover, Marks (1993) suggested that clarity is likely to be especially important during downsizing, because many employees will experience uncertainty about their new roles and responsibilities.

Participation, or the extent to which employees are kept informed and involved during times of change, also has been identified as an important contributor to employee well-being (see Locke & Schweiger, 1979; Schweiger & Leana, 1986, for reviews). This aspect might be particularly important during periods of downsizing. When feelings of job security are likely to come under threat, the effective communication of information is thought to help reduce uncertainty (Hunsaker & Coombs, 1988) and to increase survivor commitment (Grosman, 1989). Specific longitudinal evidence suggests that communication prior to a merger reduces the dysfunctional outcomes of this change by, for example, minimizing employees' feelings of uncertainty and promoting their feelings of trust in the company (Schweiger & DeNisi, 1991). Consistent with this, Marks (1993) suggested that companies that inform and involve employees will accrue more benefits of downsizing than companies that make no such efforts.

In summary, our first set of research questions concerned the issue of whether and how strategic downsizing is associated with changes in work characteristics. Specifically, what are the long-term changes in the levels of demand, control, clarity, and participation for employees?

Regarding the association of strategic downsizing with these variables, because we knew what strategic changes had been introduced, we were able to make some clear predictions. First, in relation to demand, we expected to see increases in this aspect over time because fewer employees carried out similar amounts of work. Second, although there is contradictory evidence regarding the implications of downsizing per se for control, in the current case we expected levels of this work characteristic to increase because of the empowerment strategy adopted by the company. Third, we predicted that participation would increase because the organizational strategy involved clear efforts to enhance this aspect. Finally, we investigated change in clarity, because this is one of the most important predictors of well-being. However, we made no predictions regarding change in overall levels of clarity, because there is no direct link between this dimension and the company's change strategy.

The second research question concerned the implications of strategic downsizing for long-term employee well-being. The effects of downsizing on employee well-being have been much commented on, and most studies and anecdotal evidence lead one to expect detrimental effects. However, as we have discussed, the implications of strategic downsizing, as opposed to reactive downsizing, have rarely been considered, and the focus has been on the immediate reactions to a downsizing exercise rather than on the longer term implications for job attitudes or well-being. Using a longitudinal approach, we therefore investigated the changes in job satisfaction and strain associated with strategic downsizing. Although related, these concepts are distinct and have been featured differentially within the job design literature (which has focused mostly on job satisfaction) and the stress and organizational change literature (which has focused primarily on strain). We predicted that the degree and type of change in well-being would depend on the precise set of changes to work characteristics that occurred. This gives rise to the next research issue.

The third set of questions included the following: To what extent is employee well-being related to change in work characteristics, and what is the relative importance of alternative work characteristics in this respect? This broaches the idea that some employees will experience more or different change in work characteristics than others, and if these are determinants of their psychological well-being, then these employees should show corresponding differences in their affective reactions. Investigating whether this is indeed the case is critical as it is concerned with whether the effects of strategic downsizing can be influenced through choices about work content. For example, if negative effects of increased demands can be counterbalanced by increased levels of control, clarity, and participation, then this suggests an important intervention for companies reducing the size of their workforce. As Kozlowski et al. (1993) claimed, it is important to look for ways in which the consequences of downsizing can be mediated: "From a downsizing perspective, however, the issue is not the effects *per se* but how those effects can be ameliorated through the use of various interventions" (p. 300).

This topic of inquiry is by no means a new one, and much research has investigated the relationship between work characteristics and well-being. On the basis of this research, we made the following predictions:

Hypothesis 1: To the extent that employees report an

increase in demands, they will report a decrease in job satisfaction and an increase in strain.

Hypothesis 2: To the extent that employees report an increase in control, they will report enhanced job satisfaction and reduced strain.

Hypothesis 3: To the extent that employees report an increase in clarity, they will report enhanced job satisfaction and reduced strain.

Hypothesis 4: To the extent that employees report an increase in participation, they will report enhanced job satisfaction and reduced strain.

In addition, because we included both demand and control in our analysis, we thought it appropriate to consider the interaction between these variables as suggested by the demand–control model of job stress (Karasek, 1979; Karasek & Theorell, 1990). The key hypothesis of this model is that high job demands are not harmful in themselves, but when accompanied by low control they result in psychological strain and dissatisfaction. Conversely, when demands are high but are accompanied by high levels of control, the job is considered to be an "active" one that does not incur strain. In terms of our study, if an increase in demands is accompanied by an increase in control, then the prediction from this model is that there should be little increase in strain, or little decrease in job satisfaction, for employees. However, despite the attractiveness and popularity of this model, evidence for the interaction effect is relatively weak (Ganster & Fusilier, 1989). Many studies have not shown an interaction effect (e.g., Carayon, 1993; Landsbergis, 1988), although other studies have (e.g., Dwyer & Ganster, 1991; Fox, Dwyer, & Ganster, 1993; Wall, Jackson, Mullarkey, & Parker, 1996). The present study therefore provided an important opportunity to further investigate this model, and we tested whether there is an interaction between demand and control as hypothesized by Karasek and colleagues (Karasek, 1979; Karasek & Theorell, 1990).

Method

Organizational Background

The study was conducted within one site of an American-owned chemical processing company in the United Kingdom that manufactures speciality chemicals. At Time 1, when the first survey was administered, there were 455 employees on site. At Time 2, when the second survey was administered, 4 years later, there were 283 employees on site. Thus, during our period of investigation the organization was reduced to about 60% of its original size. The shedding of labor occurred in all areas and at all levels, although the degree of downsizing was slightly greater for technical, clerical, and shopfloor employees than for professional and managerial staff.

Although the company needed to downsize to remain cost effective, it had to achieve the reduced head count whilst continuing to produce high quality and innovative products. Thus, the strategy adopted was to reduce the size of the organization over an extended period of time, primarily through introducing more efficient technologies and new working practices (notably empowerment; see below). In addition, because the company had a product base that was continually changing in response to market and technological developments, there was heavy emphasis on training and redeploying staff, both to minimize job losses and to maintain skill levels within the company.

Because of the planned approach, virtually all of the downsizing occurred as a result of natural wastage and voluntary redundancies (mostly early retirement). Less than 5% of the redundancies were compulsory (i.e., not voluntary). The need for the latter arose because of the closure of a specific plant where there was insufficient worldwide demand for the product. Although most of the employees in these jobs were retrained, redeployed, or both, there was a requirement to lay off a small number. Employees to be laid off were selected from across the site on the basis of multiple criteria (e.g., disciplinary record, absence level, and rated performance). For these employees there was extensive involvement from the human resources department to minimize the negative effects of leaving the organization (e.g., employees were given access to external career counseling and outplacement services), and there were generous severance terms by local standards.

An empowerment initiative was introduced during the study. It built on earlier changes and involved a continued emphasis on multiskilling, the removal of management layers, and a restructuring of the organization into "business" and "support" teams with closer integration of engineering with production. Managers were trained in the principles of empowerment and were given assistance in devolving responsibility and control. For most operational areas on the site, by the time of the second survey there was only one organizational layer between operators/technicians and the sitewide manager.

To support the empowerment philosophy, greater emphasis was given to individual development, especially for process operators, for whom an annual appraisal process involving goal setting and review was introduced. There was also a high level of commitment to training employees in technical skills and nontechnical aspects (e.g., quality improvement techniques). More generally, the strong human resource culture that existed within the company was demonstrated when it became 1 of the first 20 organizations within the United Kingdom to be formally recognized as an "Investor in People." In a recent and successful reaccreditation, the independent assessors stated that "many organizations are talking about introducing self-managed groups, 'empowering' staff, 'business process re-engineering' and the like. Without great fuss, many of these initiatives have actually been introduced in this site and can be seen to be working well" (Investors in People Assessment Report, 1994, p. 2). It is significant to note that, throughout the downsizing period, there was no suggestion of industrial action or interruptions to production.

Our primary role in the company was to independently assess the effects of changes introduced within the company on employees' perceptions and well-being. This included conducting more in-depth, qualitative studies within specific areas (not reported on here). Throughout the period, we also

offered independent advice to personnel driving the changes regarding the process of organizational change, particularly the empowerment strategy.

Procedure and Sample

Questionnaires were administered to small groups of employees during working hours as part of a long-term program evaluating the effects of organizational change. Employees were asked to put their name on the questionnaire so that their responses could be tracked over time. Confidentiality was strongly emphasized; for example, employees were assured that no one except the researchers would have access to their completed questionnaires.

On the first measurement occasion 346 employees completed the questionnaire, and on the second measurement occasion the number responding was 223. For each assessment, the response rate was over 75%. There was a total of 139 employees who completed the survey on both occasions; and these comprise the sample used for this study. Within this group, respondents' ages ranged from 21 to 60 years ($M = 42.5$, $SD = 9.3$), with a length of service ranging from 4 to 38 years ($M = 19.1$, $SD = 8.9$). Ninety five percent of the respondents were male.

There were three distinct occupational groups within the sample. The first, *process operators,* consisted of those 48 operators present on both measurement occasions. Their ages ranged from 24 to 60 years ($M = 44.3$, $SD = 7.9$), and their length of service ranged from 5 to 33 years ($M = 19.1$, $SD = 6.5$). There were only men in this group. The second group, *supervisory staff,* comprised 27 supervisors and managers present on both measurement occasions. Their ages ranged from 30 to 59 years ($M = 47.0$, $SD = 8.2$), and their length of service ranged from 5 to 35 years ($M = 22.6$, $SD = 8.2$). Ninety-three percent of this group was male. Finally, the *support staff* consisted of 64 technical and professional support staff (i.e., including those providing clerical/secretarial, accounting, information technology, engineering, and specialist support). Their ages ranged from 21 to 57 years ($M = 39.6$, $SD = 9.8$), and their length of service ranged from 4 to 38 years ($M = 17.8$, $SD = 10.5$). Ninety-two percent of this group was male.

Note that we conducted additional analyses to investigate the possibility that those people who left the organization might have differed in some key way from those who remained (e.g., they might have left because their jobs were most negatively affected). Thus, we made comparisons on the biographical, work characteristic, and well-being variables among: *stayers* (i.e., people present on both measurement occasions, $n = 139$), *leavers* (i.e., those who completed the survey at Time 1 but not at Time 2, $n = 205$), and *newcomers* (i.e., those who completed the survey at Time 2 but not at Time 1, $n = 82$). There were no significant differences, except that the stayers were younger than the leavers ($p < .05$), and the leavers reported lower levels of clarity than the stayers ($p < .05$). The finding that the stayers were younger than the leavers is consistent with the organization's policy to achieve downsizing through processes such as early retirements. The finding that leavers had lower clarity might have arisen because some of those amongst the leavers would have been contemplating leaving and therefore been uncertain about their future. Overall, however, the findings show that the groups did not differ significantly on core variables and therefore suggest that "mortality" is unlikely to be a major problem for the present study (Campbell & Stanley, 1966).

Measures

The questionnaire was part of a broader evaluation of organizational change and, as such, contained a wide range of measures. We describe here only the measures relevant to this study, including those relating to biographical information, work characteristics, and well-being.

Biographical information. We collected the following information for each respondent: age (in years), length of service (in years), gender, and job title. Employees were identified as belonging to one of the three major occupational groups described above: process operators, supervisory staff, or support staff. For the regression analyses, we coded occupational group membership using dummy variables.

Work characteristics. Demand was measured with a 6-item scale, which we derived by combining three items from the monitoring demand scale and three items from the problem-solving demand scale developed by Jackson, Wall, Martin, and Davids (1993; see also Wall, Jackson, & Mullarkey, 1995). The monitoring demand scale was designed to assess the extent of monitoring in a job (e.g., "to what extent do you have to react quickly to prevent problems arising?"), and the problem-solving demand scale was designed to assess more active cognitive processing to prevent or recover errors (e.g., "to what extent do you have to solve problems which have no obvious correct answer?"). Each item has a 5-point response scale that ranges from 1 (*not at all*) to 5 (*a great deal*); a total score is obtained by averaging item scores. The two scales were combined in this study as they were highly correlated. The internal reliability of the combined scale (Cronbach's alpha) was .72 at Time 1 and .75 at Time 2.

We assessed control using Jackson et al.'s (1993) measures of job control developed especially for production environments. Items were combined from two scales: timing control (which assesses the extent to which an individual has the opportunity to determine the scheduling of his or her work) and method control (which assesses the extent to which an individual has choice in how to carry out work tasks). Both scales have been shown to have adequate internal reliability and test–retest reliability and to discriminate between different jobs (Jackson et al., 1993; Wall, Jackson, & Mullarkey, 1995). Cronbach's alpha for the final 10-item control measure was .88 at both Time 1 and Time 2.

Clarity was measured by four items assessing clarity about: roles ("I am clear about the results expected of me"), departmental and business aims ("I am clear about the aims and objectives of my department's work"; "I am clear about this company's business objectives and strategies"), and performance criteria ("I understand the criteria used by my immediate boss to assess my performance"). The internal reliability of this measure (Cronbach's alpha) was .75 at Time 1 and .73 at Time 2.

We assessed participation with nine items concerning the extent of information about the job and related changes (e.g., "when changes are made which affect me, the reasons are clearly explained") and involvement in change (e.g., "my immediate boss involves me in discussing and planning changes"). The internal reliability of this measure (Cronbach's alpha) was .77 at Time 1 and .81 at Time 2.

Well-being. We used the combined scales of anxiety–contentment and depression–enthusiasm developed by Warr (1990; see also Sevastos, Smith, & Cordery, 1992) to assess people's level of job-related strain. People were asked to indicate how much of the time, in the past month, their job had made them feel a variety of reactions, on a 5-point scale that ranged from 1 (*never*) to 5 (*all of the time*). The anxiety–contentment scale includes items such as *tense, contented* (reverse scored), and *anxious;* the depression–enthusiasm scale includes items such as *miserable, depressed,* and *happy* (reverse scored). We combined these scales because they were highly intercorrelated. The items were summed to give a total score, with a higher score indicating greater strain. The internal reliability of the 12-item scale (Cronbach's alpha) for the present sample was .87 at both Time 1 and Time 2. Note that scores on strain correlated highly ($r = .70$) with scores on the 12-item version of the General Health Questionnaire (GHQ; Goldberg, 1972, 1978), which was developed to assess mental health in general populations and which has been used extensively within occupational studies (e.g., Banks et al., 1980).

Job satisfaction was assessed with the 7-item intrinsic job satisfaction scale developed by Warr, Cook, and Wall (1979). This scale has been shown to be highly correlated ($r = .63$) with a measure of overall job satisfaction (Warr et al., 1979). Items assess satisfaction with aspects that are intrinsic to the job, including: chance of promotion, freedom to choose own method of working, recognition for good work, amount of responsibility, opportunity to use ability, attention paid to suggestions, and amount of variety. Items are rated on a scale that ranges from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*). For the present sample, Cronbach's alpha was .87 at Time 1 and .91 at Time 2.

Note that, for additional analyses conducted to address the issue of common method variance (see the Discussion section), we used Warr et al.'s (1979) extrinsic job satisfaction scale. This included seven items assessing satisfaction with extrinsic aspects of work, such as pay, hours of work, and management style. Cronbach's alpha was .76 at Time 1 and .72 at Time 2.

Results

Although the focus of our study was on the psychological effects of strategic downsizing on jobs and employee well-being, it is relevant to note that sitewide indicators showed organizational benefits of the changes. During the study there was a marked improvement in performance, such as an increase in tonnage per operator, a substantial decrease in absenteeism levels, and a decrease in annual recorded accidents (i.e., those that involve time off the job) from seven accidents per year across the site to one. The latter outcome is unlikely to have been a function of people failing to report accidents because, during the same period, the number of reported "near misses" substantially increased.

We examined the first two research questions as a function of occupational status, because it is important to ascertain whether strategic downsizing differentially affects various occupational groups. We thus conducted a repeated measures analysis of variance for each work characteristics and well-being variable, with occupational group as the independent variable. Table 1 shows time effects, group effects, and Group × Time interaction effects. We examined change over time for each group using tests of simple effects. Unless otherwise stated, an alpha level of .05 was used for statistical tests, and one-tailed tests were used for demand, control, and participation, because unidirectional hypotheses were made for these variables.

Change in Work Characteristics

Our initial concern was with the overall impact of the strategic downsizing on work characteristics (namely, demand, control, participation, and clarity). To examine this, we turned our attention to the time effects for the sample as a whole, as shown in the first column in the body of Table 1.

This table shows there was a significant change in demand ($p < .001$), control ($p < .001$), and participation ($p < .001$). Regarding demand, as expected there was an increase in mean scores from 3.55 ($SD = 0.78$) to 3.89 ($SD = 0.68$). Similarly, for control, mean scores increased from 3.81 ($SD = 0.76$) to 4.01 ($SD = 0.80$), and for participation there was an increase in mean scores from 3.18 ($SD = 0.61$) to 3.44 ($SD = 0.56$). There were no significant time effects for clarity. It should be noted that there were no significant Group × Time interaction effects (shown in the third column in the body of Table 1) for the work characteristic variables. In other words, the effects of strategic downsizing were consistent across occupational groups.

In summary, the results were as expected given the nature of change that took place. That is, the increase in demand is consistent with the downsizing strategy to distribute the same amount of work across fewer people; and the increase in control and participation reflects the way this process was implemented (i.e., the simultaneous empowerment of the work force).

Change in Well-Being

In relation to the effect of strategic downsizing on well-being, it is important to note that there was no significant change in levels of strain. The possibility exists that there were decreases in strain for many people, counteracted by increases in strain for others. However, inspection of change in strain scores

Table 1
Results of Statistical Tests Obtained Using Repeated Measures Analysis of Variance

Variables	Time $F(1, 136)$	Group $F(2, 136)$	Group × Time $F(2, 136)$	Process operators ($n = 48$)			Support staff ($n = 64$)			Supervisory staff ($n = 27$)		
				Time 1	Time 2	$F(1, 136)$	Time 1	Time 2	$F(1, 136)$	Time 1	Time 2	$F(1, 136)$
Demand	25.38****	11.41****	1.23	3.92 (0.66)	4.13 (0.60)	3.51**	3.31 (0.83)	3.73 (0.68)	17.46****	3.53 (0.58)	4.01 (0.63)	8.95****
Control	8.44****	11.74****	0.10	3.52 (0.81)	3.69 (0.88)	2.23*	3.85 (0.73)	4.05 (0.79)	4.06***	4.21 (0.50)	4.47 (0.49)	2.77**
Participation	18.70****	4.42**	0.33	3.03 (0.61)	3.35 (0.61)	11.08****	3.19 (0.53)	3.41 (0.57)	6.78****	3.40 (0.60)	3.66 (0.42)	3.71**
Clarity	0.05	6.02***	1.76	3.43 (0.82)	3.58 (0.61)	2.62*	3.61 (0.50)	3.54 (0.61)	0.84	3.94 (0.48)	3.91 (0.57)	0.09
Strain	1.28	0.46	2.95*	2.71 (0.69)	2.45 (0.62)	7.31***	2.65 (0.56)	2.67 (0.60)	0.08	2.54 (0.76)	2.58 (0.54)	0.08
Job satisfaction	4.66**	7.30****	3.20**	4.11 (1.11)	4.54 (1.09)	8.50***	4.62 (0.88)	4.56 (1.04)	0.21	4.98 (0.81)	5.20 (0.61)	1.33

Note. Simple effects are shown for each group. Numbers in parentheses are standard deviations. Tests for demand, control, and participation were one tailed.
*$p < .10$. **$p < .05$. ***$p < .01$. ****$p < .001$.

showed a normal distribution of scores about the mean.

There was a significant change in job satisfaction ($p < .05$) for the sample. Mean scores increased from 4.52 ($SD = 0.71$) to 4.68 ($SD = 0.72$), yet there was also a significant Group × Time effect for this variable. Looking at the results of simple effect tests, one can see that there was a significant increase in job satisfaction scores for process operators ($p < .01$) but not for supervisory staff or support staff.

In summary, there was no overall change in strain, but job satisfaction increased for the process operators. These results could be explained by the fact that, although demand increased, this was counterbalanced by other positive changes to job features. Such an argument implies a link between work characteristics and well-being, which has not yet been established.

Relationship Between Work Characteristics and Well-Being

Having shown that there was an impact of strategic downsizing on work characteristics and well-being, we next examined whether change in the former was associated with change in the latter.

Before we tested the specific hypotheses, we examined the cross-sectional correlations amongst key variables. Table 2 shows the intercorrelations of the key variables at Time 1 and at Time 2. All of the work characteristic variables have significant associations with the indexes of well-being. Strain and job satisfaction are significantly correlated with each other, as would be expected, but they nevertheless have differential patterns of association with the work characteristics variables, suggesting that it is important to continue to examine both aspects of well-being separately. The intercorrelations among the work characteristics are moderately high. This means that, in subsequent regression analyses, we did not rely solely on beta weights as the indicator of the relative importance of predictor variables, because they are affected by intercorrelations between predictors. As Tabachnik and Fidell (1989) recommended, we also examined the size of squared semipartial correlations. In each case we found that these were in the same rank order as the standardized beta weights, and thus we report only the latter.

We tested the hypothesized relationships between work characteristics and well-being using hierarchical regression analysis. We used this technique to enable the entry of specific variables (or blocks of variables). Separate regression analyses were carried

Table 2
Intercorrelation Matrix of Key Variables at Time 1 and Time 2 (N = 139)

Variable	1	2	3	4	5	6	7	8	9
1. Gender	—	−.10	−.03	.19**	−.06	.12	−.03	−.04	.07
2. Age	−.11	—	.78***	.23***	.19**	.15	.19**	−.17**	.23***
3. Tenure	−.09	.81***	—	.23***	.18**	.19**	.20**	−.14	.29***
4. Control	.17**	−.02	.03	—	.16**	.29***	.35***	−.18**	.35***
5. Demand	−.12	.21**	.07	.31***	—	.04	.16	−.04	.01
6. Participation	.11	−.02	.14	.22***	.20**	—	.52***	−.42***	.64***
7. Clarity	.01	.26***	.30***	.29***	.19**	.57***	—	−.54***	.58***
8. Strain	.05	−.11	−.13	−.17	−.19**	−.48***	−.53***	—	−.57***
9. Job satisfaction	.04	.20**	.29***	.40***	.12	.60***	.58***	−.60***	—

Note. The top half of the matrix shows intercorrelations for Time 1; the bottom half shows intercorrelations for Time 2.
**$p < .05$. ***$p < .01$.

out for strain and for job satisfaction, with change in strain and change in job satisfaction, respectively, as the dependent variables. Note that we created all change variables by subtracting Time 1 scores from Time 2 scores (e.g., we computed change in strain by subtracting strain-at-Time-1 scores from strain-at-Time-2 scores). The case:variable ratio for the analysis was approximately 8:1, which meets the minimal criteria for regression analysis of at least five cases per variable (Tabachnik & Fidell, 1989).

The first variable to be entered into the equation was well-being at Time 1 (i.e., either strain at Time 1 or job satisfaction at Time 1), thus controlling for the effects of existing levels of well-being prior to the change. The second step was to enter the background variables, to control for the effects of age, length of service, gender, and occupational status (dummy coded). The next step was the entry of all Time 1 work characteristics (i.e., demand at Time 1, control at Time 1, clarity at Time 1, participation at Time 1). This enabled us to partial out the effects of pre-existing levels of these characteristics. Step 4 was entry of the change variables (i.e., change in demand, change in control, change in clarity, and change in participation). Any variance accounted for at this stage, shown by an increase in R^2, is the contribution of change in work characteristics to change in well-being, having controlled for the pre-existing levels of work characteristics and background variables. Finally, Step 5 was the entry of the demand–control interaction term (i.e., change in demand multiplied by change in control) for the test of the demand–control hypothesis.

Because the hypotheses in Steps 3 and 4 were unidirectional, we used one-tailed significance tests to evaluate these. We used two-tailed tests for all other tests.

Results of the regression analyses for strain and job satisfaction are shown in Tables 3 and 4, respectively. These show that, as hypothesized, changes in work characteristics predicted change in well-being (see Step 4).

More specifically, we hypothesized that an increase in demand would predict a decrease in well-being (Hypothesis 1) but that an increase in control, clarity, and participation would predict an increase in well-being (Hypotheses 2, 3, and 4, respectively). To determine whether these specific relationships existed, we considered the significance of beta weights and their direction.

Regarding demand, it can be seen that change in demand was not significantly associated with strain scores at any point in the regression equation. Similarly, change in demand was not significantly associated with change in job satisfaction scores. This suggests that there is no support for Hypothesis 1. However, it is interesting to note that, in the final regression equation (i.e., Step 5), higher levels of demand were associated with decreases in job satisfaction ($p < .01$). This suggests that demand is an important predictor of well-being, but it is the pre-existing level of demand (rather than the degree of change in demand) that is the key determinant.

Hypothesis 2 concerned the relationship between control and well-being. There was an almost-significant association between an increase in control and a decrease in strain ($p < .10$). In addition, an increase in control was strongly associated with an increase in job satisfaction ($p < .001$).

Inspection of the results showed that clarity was an important determinant of well-being, supporting Hypothesis 3. An increase in clarity was significantly associated with a decrease in strain ($p < .01$), and there was an almost-significant association between increased clarity and increased job satisfaction ($p < .10$). In addition, it is worth observing that

Table 3
Results of Hierarchical Regression Analyses for Variables Predicting Strain (N = 139)

Step	Predictors	1	2	3	4	5
1. Strain at Time 1	Strain	−.55****	−.56****	−.65****	−.67****	−.67****
2. Background factors	Supervisory staff		.11	.16*	.24***	.24***
	Support staff		.19**	.22**	.21**	.21**
	Process operators		—	—	—	—
	Gender		.04	.03	.01	.01
	Age		.20	.18	−.02	.02
	Tenure		−.27**	−.25*	−.01	−.02
3. Time 1 variables	Demand			.00	.07	.08
	Control			.05	.00	.00
	Clarity			−.27****	−.37****	−.37****
	Participation			.07	−.20***	−.20***
4. Change variables	Change in demand				.06	.05
	Change in control				−.12*	−.12*
	Change in clarity				−.24***	−.23***
	Change in participation				−.35****	−.35****
5. Interaction term	Change in Control × Change in Demand					.02
R^2		.33****	.37****	.41****	.59****	.59
Change in R^2			.04	.04*	.17****	.00

Note. The displayed coefficients are standardized beta weights at each step. One-tailed tests of the statistical significance of beta weights are used for variables entered in Steps 3 and 4. A dash indicates no data were available.
*$p < .10$. **$p < .05$. ***$p < .01$. ****$p < .001$.

levels of clarity at Time 1 were important. High clarity at Time 1 was associated with a decrease in strain ($p < .001$) and with an increase in job satisfaction ($p < .01$).

As predicted in Hypothesis 4, participation was an important predictor of well-being. Increases in participation were strongly associated with a decrease in strain ($p < .001$) and with an increase in job satisfaction ($p < .001$). It is again interesting to note the importance of Time 1 levels of this variable. High pre-existing levels of participation were significantly associated with decreases in strain ($p < .05$) and with increases in job satisfaction ($p < .001$).

As shown by Step 5, we included a further variable in the analysis to examine whether there was an interaction between demand and control (i.e., change in demand multiplied by change in control). This tests the prediction that, if any increase in demand is also accompanied by an increase in control, there will be no negative effect on well-being but, conversely, that where demand increases without a corresponding increase in control, well-being will decline. It can be seen that the interaction term was not a significant predictor of strain scores, but the interaction term contributed a significant percentage of variance over and above other variables when predicting job satisfaction ($p < .05$), and it had a significant beta weight in the final equation ($p < .05$). Interpretation of this finding was aided by plotting the regression equation. This showed that it is only under the condition of little or no increase in demand where the positive effects of enhanced control are seen. For the situation in which there has been a large increase in demand, an increase in control makes little difference to the job satisfaction scores. This interpretation contrasts with what is expected on the basis of Karasek's (1979) hypothesis. The latter would predict that it is the situation in which there are increases in demand that an increase in control should influence well-being.

In summary, in terms of explaining change in strain, the most important predictors were clarity and participation; both their levels at Time 1 and their degree of change over time. These variables were also important in predicting change in job satisfaction. In addition, increased levels of control were positively associated with job satisfaction. The interaction term was also a significant predictor of job satisfaction, and further investigation showed that it is particularly under conditions of little or no increase in demands that increased control exerts its positive effect. Although changes in demand were not associated with any detriment, employees with higher levels of demand to begin with were more likely to suffer a decline in their well-being.

Table 4
Results of Hierarchical Regression Analyses for Variables Predicting Job Satisfaction (N = 139)

Step	Predictors	1	2	3	4	5
1. Job satisfaction at Time 1	Job satisfaction	−.49****	−.55****	−.69****	−.65****	−.63****
2. Background factors	Supervisory staff		.18**	.16*	.04	.06
	Support staff		—	—	—	—
	Process operators		.07	.11	.13*	.13*
	Gender		.02	.02	.05	.05
	Age		−.13	−.12	.17	.13
	Tenure		.27**	.28**	−.00	.02
3. Time 1 variables	Demand			−.08	−.18***	−.19***
	Control			−.01	.15**	.12*
	Clarity			.26***	.24***	.23***
	Participation			.00	.39****	.36****
4. Change variables	Change in demand				−.11	−.08
	Change in control				.31****	.33****
	Change in clarity				.16**	.13*
	Change in participation				.51****	.52****
5. Interaction term	Change in Control × Change in Demand					−.14**
R^2		.25****	.31****	.35****	.65****	.66****
Change in R^2			.06*	.04	.29****	.01**

Note. The displayed coefficients are standardized beta weights at each step. One-tailed tests of the statistical significance of beta weights are used for variables entered in Steps 3 and 4. A dash indicates no data were available.
*$p < .10$. **$p < .05$. ***$p < .01$. ****$p < .001$.

Discussion

In this article we set out to investigate the long-term implications of strategic downsizing on employees' jobs and well-being. Results of the study show that there was no decrease in employee well-being as a result of the downsizing, despite an increase in demands. The potential negative effects of high demands appear to have been counterbalanced by improvements to work characteristics that arose from initiatives introduced during the period. Analyses conducted at the individual level support this interpretation and show a clear link between work characteristics and well-being. Clarity and participation were particularly important predictors, suggesting that the negative consequences of demand can be offset by efforts to establish clear roles and responsibilities (i.e., increase clarity) and to inform and involve employees (i.e., increase participation). These factors presumably serve to reduce uncertainty during a time of organizational instability. Results suggest that a further important route for facilitating well-being is to enhance levels of control over the timing and methods of work, a strategy that is likely to be especially important when the level of demands has not increased to any substantial degree. Finally, the results highlight the potential long-term positive implications of designing an appropriate psychosocial work environment. That is, pre-existing levels of clarity and participation were significant predictors of well-being 4 years later, suggesting that these variables had a pervasive effect on employee mental health.

Although this study shows that positive change in work characteristics can occur during strategic downsizing, with corresponding positive implications for employee well-being, we are certainly not suggesting that it is the reduction in head count that causes this positive change. Instead, the findings suggest that positive change can occur either indirectly, as a result of strategies that are introduced simultaneously (such as empowerment), or directly, through opportunities that arise as part of the downsizing (such as the removal of management layers or the introduction of new technologies). This gives rise to an important message for practitioners. That is, paying attention to the design of work and the wider context can enhance an organization's ability to achieve downsizing without incurring severe negative long-term consequences for employees. Of course, this is not to say that all negative psychological effects of downsizing will be reduced by work design or related initiatives. Aspects such as insecurity, feelings of guilt, and so on will still need to be considered and managed, especially in the short term. However, at least some of the potentially negative long-term effects of downsizing (i.e., in this case,

those associated with high work demand) can be mediated by proactive consideration of employees' work content. Evidence to date suggests that such a proactive approach is rare (Cameron et al., 1991; Harback & Craft, 1991; Marks, 1993). For example, Byrne (1988) described how the tasks and responsibilities of several people were simply reallocated to individual employees after jobs were lost.

Methodological Limitations

An important methodological issue arises from the fact that both the work characteristics and the well-being measures were based on questionnaire data, and thus the findings could reflect common method variance. For example, at Time 2, employees might have felt more positive for some unidentified reason (such as a pay increase) and thus rated both work aspects and outcomes more favorably, regardless of any actual change in jobs. However, if this explanation were true, one would expect to see a pattern of results in which all aspects of work were rated more positively over time. Results on dimensions that were not the focus of this study suggested this was not the case. For example, the support staff group reported being less satisfied with the extrinsic aspects of their job (e.g., pay, physical work conditions) over the same period. Additional analyses also showed that there were differential relationships between work characteristics and different outcomes measures. For example, as one would expect, changes in work characteristics were more predictive of change in job satisfaction than of change in satisfaction with extrinsic aspects of work. Such differential relationships would not exist if the results were purely a reflection of common method variance or similar response biases. In addition, interview and observational data showed that there were real changes in work aspects that our survey results indicated changed over time, and these changes clearly mapped onto organizational strategies. Finally, increases in well-being were in line with improvements in relevant objective indicators, such as absence and safety. These points together suggest that it is unlikely that common method variance is a viable explanation of the findings.

An additional methodological concern is the time gap of 4 years with two measurement points. One could argue that this period is too long. However, this was the time frame required to downsize without large numbers of compulsory redundancies as well as to properly implement the changes to work content. Commentators agree that several years are needed for changes in work features to be fully implemented and to bring about a sustainable organizational transformation (e.g., Lawler, 1992). Nevertheless, in an ideal situation more measurements would have been taken to allow a lagged design. This would have meant we were better able to tease out the direction of the causality of relationship between work characteristics and well-being. For example, it is possible (although perhaps not so likely) that employees whose well-being increased over time might have then set out to take on board more complex, enriched jobs and sought more information and clarity.

A related question concerns the extent to which this represents a study of strategic downsizing as opposed to other change. It could be argued that employees' reactions to their work characteristics have very little to do with their reactions to downsizing. However, to argue this would be to miss the point of the study. Certainly, one highly legitimate approach has been to consider people's immediate reactions to their colleagues' job loss (see, e.g., Brockner et al., 1987). However, when a more strategic approach to downsizing is taken, which by definition involves other organizational development strategies, then it is appropriate to assess the consequences of the total change.

A final concern, which is conceptual as well as methodological, relates to the investigation of demand and the demand–control interaction effect. Our focus was on a change in demand (i.e., the extent of an increase). However, it seems logical to consider the absolute levels of demand, both in terms of the starting point and the extent of any increase. For example, people might report an increase in their level of demand, but this level could still remain within tolerable limits. The same increase in demand might have completely different consequences if the starting point is higher. Thus, the effect of an increase could depend on whether the demand level already is at, or goes beyond, some critical level. Certainly our results suggest that the absolute level of demand people have to begin with is more important than the degree of change in demand. This finding suggests that there is a need for a different methodological and conceptual approach, one that is not based on simple assumptions of linearity and one that includes normative data about what level of demand is tolerable to most people. Clearly, addressing this issue in full is beyond the scope of the present article, but we point to it as an aspect that needs consideration in the future.

In spite of these issues, the design of our study is a strong one that offers several advantages, including a

longitudinal approach and the use of standardized measures complemented by objective indicators.

Areas for Further Research

The above methodological issues highlight the need to replicate and extend the approach we took in this article. More generally, we call for broader, yet more precise, theoretical models of downsizing and its psychological effects. It seems that researchers should, at a minimum, distinguish between a reactive and a strategic approach in terms of the different driving forces for, and methods of, achieving downsizing. In a situation such as reactive downsizing brought about through compulsory redundancies, it might be predicted that the effects on well-being are primarily mediated through procedural justice and communication strategies. Here, in the case of strategic downsizing brought about through natural wastage and voluntary turnover, we expected that the long-term effects on well-being would be, to a large degree, a consequence of the extent and nature of change to work content. One could further predict that, in cases of strategic downsizing involving changes to job content, individual-difference factors such as growth need strength might moderate employee reactions.

Other distinctions also give rise to different research questions. Freeman and Cameron (1993) differentiated between downsizing as "reorientation" (i.e., where the goal is not just to make the organization smaller but fundamentally different) and downsizing as "convergence" (i.e., as part of continuous improvement and streamlining); Kozlowski et al. (1993) identified variations in downsizing targets (such as across-the-board reductions compared to target locations or segments) and different downsizing strategies (such as natural attrition, layoffs, induced redeployment, involuntary redeployment, compulsory redundancies); and Marks (1993) identified a range of different downsizing techniques, such as increasing the part-time and temporary work force, organizational restructuring, job redesign, and the introduction of new technology. A clear taxonomy of these different types and methods of achieving downsizing would clearly facilitate research on its psychological effects.

A further important area of inquiry concerns the need to understand what enabling features exist within organizations that make them more likely to adopt a planned and strategic approach to downsizing. Kozlowski et al. (1993) proposed three characteristics: the strategic leadership of the firm, human resource management system sophistication, and organizational culture. Marks (1993) similarly concluded that there is a clear relationship between the extent to which companies have "cutting edge" human resource practices and the degree to which they have a strategic approach to downsizing. Clearly, decisions about the approach to reducing head count do not occur in a vacuum, and we need to understand the features that facilitate companies' adopting a more constructive and planned approach.

The likelihood is that downsizing will continue to be a significant trend within industrialized countries and, from a humanistic perspective, it is important to fully understand its effect on employee well-being and how this might be mediated by managerial choices and organizational interventions. Moreover, if it is the case that the effectiveness of downsizing depends to a large degree on the reactions of the employees, as has been suggested (e.g., Kozlowski et al., 1993; Marks, 1993), then there will also be important economic implications of such research.

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