**Chapter 2**

**Job-Related Sources of Strain**

As discussed in Chapter 1, contemporary approaches to understanding stress are based on a transactional perspective. One core element of this model of stress-coping is awareness of the events, issues, and objects (including people) that may function as stressors (sources of strain) for individuals. Lazarus and Folkman (1984) have argued that strain occurs when environmental demands or constraints are perceived by a person to exceed his or her resources or capacities. Research on job-related stressors has built upon this perspective, as well as on Karasek’s (1979) job demands-control model, which will be discussed in further detail in Chapter 5. These and other theoretical accounts of the stress-coping process emphasize the importance of thoroughly exploring the nature and scope of environmental factors that have the potential to create strain for individuals in the workplace.

Determinants of strain can generally be grouped into three major categories: job-specific sources, organizational sources, and individual (personal) sources. In this chapter, we focus on environmental rather than individual (within-person) factors, but this does not imply that the latter are not important. Indeed, there is an extensive literature, especially in social and clinical psychology, that highlights the salience of dispositional traits and states (such as Type A behavior disposition and neuroticism) for the experience of strain, and in Chapter 5 we consider some of these variables as potential moderators of stressor-strain relationships. For the present, however, we concentrate on factors that lie external to the individual and that can impinge upon his or her experience of workplace-related strain.

Under the rubric of “environmental” sources of strain, Cartwright and Cooper (1997) have further differentiated six primary work-related stressors:

1. Factors intrinsic to the job itself
2. Roles in the organization
3. Relationships at work, such as those with supervisors, colleagues, and subordinates
4. Career development issues
5. Organizational factors, including the structure and climate of the organization as well as its culture and political environment
6. The home-work interface

The first five of these categories relate to stressors within the workplace environment, whereas the sixth focuses on the interplay between the job and life off the job. Our intention here is not to provide an exhaustive description of all potential stressors within each category but to highlight some of the critical factors that have been explored in research and to illustrate the relationship between these factors and worker experiences of strain. Each category will be reviewed separately, but it is important to note that they are not necessarily discrete and that people’s responses to stressors are part of a dynamic process. Nevertheless, the above classification offers a useful framework for identifying physical and psychosocial sources of job-related strain.

The order of discussion that follows does not imply that, across occupational groups, certain forms of stressors are uniformly more salient than others. Early research on job stress tended to focus predominantly on aspects of the physical environment, with a prevalence of research on jobs where these factors were likely to have a significant impact upon individuals. During the 1960s, particularly in the wake of research conducted by Kahn, Wolfe, Quinn, and Snoek (1964), interest shifted somewhat away from physical factors to role stressors, and this emphasis has continued. In the 1990s, however, changing employment and labor market conditions, along with changes in workforce demographics, have fueled interest in issues surrounding the nature of the job and job security, the virtual disappearance of lifetime career paths in many sectors, and the balance between job or career demands and family commitments and responsibilities. We reflect upon some of these trends later in this chapter.

**Intrinsic Job Characteristics**

These stressors are associated with the performance of specific tasks that make up an individual’s job, sometimes referred to as task content factors (Kahn & Byosiere, 1990), as well as work environment and work-scheduling factors. They include variables such as the level of job complexity, the variety of tasks performed, the amount of discretion and control that individuals have over the pace and timing of their work, and the physical environment in which the work is performed. Here we will survey some of the physical demands and environmental stressors that workers may have to contend with and that may influence their levels of strain. Chapter 5 examines the role of lack of discretion and control as a major predictor of job-related strain.

Early investigations of blue-collar workers aimed to identify the links between physical conditions and productivity (Munsterberg, 1913; Roethlisberger & Dickson, 1939), and the importance of relationships between environmental factors and health was soon realized. The significance of “subjective reactivity” to the physical environment also evolved from the Hawthorne studies (Roethlisberger & Dickson, 1939). Kornhauser (1965) observed that factors related to poor mental health included unpleasant working conditions and the requirements to operate at a fast pace, expend considerable physical effort for long periods, and work excessive and inconvenient hours.

The physical demands of work surroundings and the distress caused by noise, vibration, and extremes of temperature will be briefly reviewed first, as they represent some of the earliest forms of stressors that were investigated by organizational psychologists and other researchers in the field. Then we examine workload (both quantitative and qualitative), work hours (including shift work), the effects of technological changes, and exposure to risks and hazards as potential agents of job-related strain.

**Noise**

Poor working conditions (including excessive temperature or noise) can have a serious detrimental impact on worker physical health and psychological well-being (Cooper, 1987). Jones (1983) suggested that the importance of sound to individual health and well-being cannot be overstated. Although certain kinds of sound (for instance, language and music) enrich people’s lives and underpin culture and society, unwanted sound is referred to as noise. Ivancevich and Matteson (1980) argued that excessive noise (approximately 80 decibels) on a recurring, prolonged basis can cause strain, predominantly by reducing worker tolerance to other stressors and adversely influencing motivation (Smith, Cohen, Cleveland, & Cohen, 1978). However, noise operates less as a stressor in situations where it is excessive but expected than in those circumstances where it is unpredictable or unexpected. In addition, a change in noise levels can be potentially more stressful than absolute noise levels (Jewell, 1998).

Noise has been reported by many groups of workers as a harmful stressor, particularly in manufacturing and similar industries. For example, in the U.K. steel industry, Kelly and Cooper (1981) observed a relationship between perceptions of noise and levels of strain, and unpleasant working conditions due to noise (and other factors intrinsic to the job) were found to be a significant predictor of job dissatisfaction among workers on drilling rigs and platforms in the North Sea (Sutherland & Cooper, 1986) and on an offshore installation in Norwegian waters (Hellesoy, 1985).

**Vibration and Temperature**

Along with noise, vibration and temperature are acknowledged as major environmental sources of strain, producing elevated catecholamine levels and alterations to psychological and neurological functioning (Selye, 1976). Health hazards include nausea, loss of balance, and fatigue. Vibration from rotary or impacting machines is particularly problematic in industries such as steel casting (Kelly & Cooper, 1981); in occupations that use machinery such as pneumatic drills, riveting hammers, aircraft propellers, and helicopters; and on offshore drilling rigs and platform installations (Sutherland & Cooper, 1986). Vibrations that transfer from physical objects to the body may adversely affect performance; hands and feet are particularly vulnerable, but the annoyance factor is also a major psychological consideration. Vibration was reported as a substantial stressor by 37% of workers in Sutherland and Cooper’s (1986) study, even though many claimed that they had habituated to it. Unfortunately, the long-term effects of this exposure are not known, and further longitudinal studies are needed to ascertain the full range of vibration effects on physical and psychological well-being.

Temperature is another characteristic of the physical environment that may have a significant impact on workers. Physiological responses to thermal conditions vary greatly between workers and even within the same individual from one occasion to the next (Ramsey, 1983). Nevertheless, extreme temperatures (hot or cold) can induce physiological responses that might have undesirable effects on both work performance and individual health and well-being (Jewell, 1998). Work that demands critical decisions, fine discrimination, and performance of fast or skilled action can be impaired by thermal stressors. In a cold environment, manual dexterity is reduced and may be a factor in accident occurrence due to reduced sensitivity, slowed movement, and interference from protective clothing rather than to loss of impaired cognitive ability (Surry, 1968). Similarly, performance of perceptual and motor tasks deteriorates in very high temperatures (Jewell, 1998). As with vibration, there is a need for more controlled research that examines the range of effects of extreme temperatures, as well as exploring individual differences in temperature tolerance

**Workload**

The amount of work that has to be performed is another significant stressor for many workers. Both overload and underload can generate psychological (and physical) strain. In 1908, Yerkes and Dodson proposed their now well-known Yerkes-Dodson Law, which states that there is an inverted-U relationship between the amount of work required of a person and his or her health and performance. Each individual therefore has an optimal band of workload. Substantial deviations above or below this optimal band are likely to induce strain.

It is also important to distinguish between quantitative and qualitative overload/underload. Quantitative workload refers to the sheer amount of work required and the time frame in which work must be completed. Having to work under time pressure to meet deadlines is a major source of quantitative overload (Narayanan, Menon, & Spector, 1999) and has been related to high levels of strain, anxiety, and depression, as well as to job performance (Cooper & Roden, 1985; Kushmir & Melamed, 1991; Westman & Eden, 1992). Quantitative underload has also been identified as a stressor, with boredom and lack of challenge from monotonous, routine work predicting anxiety, depression, and job dissatisfaction (Kelly & Cooper, 1981). Lack of stimulation may be particularly damaging at night, when the individual could have difficulty adjusting to the change in sleep pattern but does not have enough stimulation in the work setting to keep alert (Poulton, 1978).

Work overload and underload may also result from an irregular flow of work that is not under the control of the worker. This is not restricted to paced assembly lines; many outdoor occupations are paced by climatic conditions, and a variety of jobs are controlled by the dictates of seasonal demands or market needs. Certain workers, such as air traffic controllers, firefighters, and pilots, must deal with long periods of inactivity and the need to spring into action when a crisis occurs. This is potentially hazardous if the employee fails to respond appropriately in an emergency (Davidson & Veno, 1980).

Qualitative overload and underload can also be potent sources of psychological strain and are associated with workers’ affective reactions to their jobs. Qualitative overload occurs when individuals believe they do not have the skills or capacities to satisfactorily perform job tasks, and it has been linked to low levels of self-esteem (Udris, 1981, cited in International Labour Office [ILO], 1986). An example of this would be a line worker who has been promoted to a supervisory capacity on the grounds of superior work performance but who has no past experience of supervision of others or work delegation. This situation may be exacerbated by the person’s having to assume responsibility for the performance outputs of other workers.

Qualitative underload may be as damaging as overload in that the individual is not given the opportunity to use acquired skills or to develop full potential ability. For example, Hall (1976) demonstrated that graduate recruits are likely to suffer qualitative underload. Following a stimulating university environment, they often enter employment with high expectations that are not realized. This manifests itself in reported job dissatisfaction, poor motivation, and high labor turnover (Hall, 1976). As with quantitative underload, boredom and shifts or lapses in attention may have serious consequences. Also, the individual feels that he or she is not getting anywhere and is unable to demonstrate his or her full potential. Udris (1981, cited in ILO, 1986) suggested that qualitative overload is associated with dissatisfaction, tension, and low self-esteem, whereas qualitative underload is linked to dissatisfaction, depression, irritation, and psychosomatic complaints. New technology and the increasing automation of industry can lead to the simplification of work and repetitive jobs that are potentially stressful in terms of workload (Martin & Wall, 1989). Although a hectic work pace is stressful, work that is dull, repetitive, and monotonous is equally detrimental to the individual’s physical and psychological well-being (Warr, 1994). Lack of stimulation, underutilization of skills, and boredom characterize many blue-collar occupations and may also be dangerous. For instance, Cheliot (1979) found a high incidence of deactivation episodes among electronic assemblers (monitored by continuous electroencephalography over the entire day). The theta rhythm observed, referred to as microsleep, is indicative of the boredom and tedium experienced by the workers and may be responsible for the occurrence of accidents. Melamed, Ben-Avi, Luz, and Green (1995) also found that repetitive work and work underload were linked with subjective monotony, which in turn was associated with lower job satisfaction and higher levels of psychological distress.

An important issue to consider in research on workload is the distinction between perceived and actual (or objective) demands. The transactional model of stress-coping emphasizes that the individual’s perception of his or her environment is critical for the experience of strain and the activation of coping responses. From this perspective, objectively defined characteristics of the work environment do not necessarily contribute to strain, because these may be perceived as a threat to well-being by one individual but not by another. Research on job design, for instance, has indicated that perceptions of job characteristics may be salient for individuals’ reactions but that actual job characteristics are also important to assess (Melamed et al., 1995). From an organizational intervention standpoint, it is relevant to determine whether certain environmental factors are consistently reported by a large proportion of the workforce as being stressful, for such consensus would indicate that the effects of these factors could not be explained by differential perceptions.

From the above overview, it is evident that optimal matching between work demands and individual capabilities is required to prevent strain from developing. This may necessitate greater flexibility in the design of jobs to tailor them more directly to the skills and interests of individual workers. In many current workplace contexts, this may not be easy to achieve, given the relatively fixed job structures that are established. One of the major challenges is to create job designs that promote the achievement of organizational goals, while at the same time providing individuals with the opportunity to engage in satisfying and fulfilling job tasks that do not create unmanageable strain.

**Work Hours**

The sheer number of hours that a person works can produce strain. Numerous studies have found a significant correlation between the overall number of hours worked and various indices of health and well-being. A recent meta-analysis of research in this field (Sparks, Cooper, Fried, & Shirom, 1997) obtained small but statistically significant correlations between hours of work and overall health, as well as both physiological and psychological health symptoms. Individuals who worked excessive hours showed more symptoms of ill health than their counterparts who worked fewer hours. Sparks et al. (1997) noted, however, that there may be a nonlinear relationship between number of hours worked and strain-related symptoms, with individuals working more than 48 hours a week being most susceptible to health problems.

Recent years have witnessed the emergence of an increasing variety of different patterns of working hours or weeks, generically referred to as work schedules. There are many social and economic reasons for the utilization of alternatives to the typical 9 a.m. to 5 p.m., 40-hour working week, but there can be no doubt that they have significantly affected quite a large proportion of the workforce. The most frequently studied alternative work schedule is shift work, which is typically defined as a changing pattern of work hours (although some workers are employed on so-called permanent shifts). Given the increasing demand for 24-hour provision of services, changing technologies that facilitate continuous plant operation, and ever-increasing competition within the marketplace, more and more organizations are using shift work as an approach to increasing their productivity and efficiency. In some industries, particularly transport and communication sectors, shift workers constitute up to 40% of the labor force (Folkard, 1996).

In the past 20 years, a great deal of research has been carried out to determine the effects of shift work on workers’ job performance (especially efficiency), work attitudes, and overall psychological and physical well-being. As noted by Folkard (1996), there is now considerable evidence that shift work can lead to a variety of difficulties for shift workers and their families, primarily because of disturbances in circadian rhythms (the “body clock”) and disruptions to family and social life. In many cases, these effects have been associated with a decline in physical health, satisfaction, and overall subjective well-being (Folkard, 1996; Seymour & Buscherhof, 1991).

However, problems with shift work are not uniform across all shift work schedules, nor do all individuals experience the same kinds of problems or to the same extent, and further investigations are needed to determine the factors that mediate and moderate the effects of shift work. For instance, it has been long known that fixed shifts are less harmful to employees than rotating shifts, especially backward rotating (Jamal & Baba, 1992). For instance, Toterdell, Spelten, Smith, Barton, and Folkard (1995) found that night shift work can cause additional problems for workers because they need to adjust to two different routines: a nocturnal work shift schedule and a diurnal pattern on their days off work. These researchers also suggested that more attention needs to be given to the timing and duration of rest days, particularly for night-shift workers.

Another form of alternative work schedule that has received some attention recently is the compressed shift schedule. Again for enhanced flexibility and productivity, and also to reduce travel costs where workers must be transported to a workplace that is some distance from where they live (e.g., an offshore oil rig), many organizations have extended the working hours per day, sometimes (but not always) accompanied by a shorter working week. Pierce and Dunham (1992) explored the impact of changing from a forward-rotating 8-hour shift schedule to a 12-hour compressed-shift schedule. Their findings indicated that compressing the shift schedule may in fact mitigate some of the negative effects typically found with shift work, especially because it permits better matching between the job and off-the-job (e.g., family) activities.

**New Technology**

In a rapidly changing occupational environment, skills may quickly become obsolete. However, the need to constantly become familiar with new equipment and systems may pose a threat to some individuals. Unless adequate training and preparation are provided, potentially stressful situations may develop when new technology is introduced into the workplace and the individual feels unable to cope with the innovations. Korunka, Weiss, Huemer, and Karetta (1995) observed, for instance, that the introduction of new technologies is related to changes in employee job satisfaction and physical health. Similarly, the pressures of keeping up with new technology are also experienced by business executives and managers (Cartwright & Cooper, 1997). Although computer utilization at all levels of organizations has increased dramatically in recent years, often managers are the most wary of advances in computer technology and the least inclined to adopt new systems (Beatty & Lee, 1992; Hall & Torrington, 1986). This may create problems not only for managers themselves but also for their (perhaps more computer-literate) subordinates, who can feel thwarted in their efforts to “modernize” work processes by a lack of expertise and even interest to update on the part of their superiors. Subordinates may also experience overload if they do not receive adequate guidance and supervision from their supervisors.

**Exposure to Risk and Hazards**

Various occupational groups have been identified as high risk in terms of physical danger: for example, police officers, mine workers, soldiers, prison personnel, firefighters, and workers on oil and gas exploration and production installations (Cartwright & Cooper, 1997; Davidson & Veno, 1980; Elliot, 1985; Fisher & Cooper, 1990; Kalimo, 1980). These workers may be in a constant state of arousal, ready to react immediately. The resulting adrenaline rush, muscle tension, and respiration changes may be a threat to long-term health. However, it is not known if the special risks associated with these occupations are necessarily perceived as sources of strain by individuals engaged in them. It is possible that a continued emphasis on the need for safety in a hazardous environment may be a greater source of strain than the hazards themselves. Bohemier (1985) suggested that it is human nature to avoid thinking about danger or death in a hazardous or risky environment and that it is necessary to block out some of the realities that the worker must otherwise continually face.

Nevertheless, studies indicate that some workers do perceive the risks and hazards associated with the job as a source of strain. For instance, Kelly and Cooper (1981) and Cooper and Kelly (1984) found that casters in the steel industry and crane operators acknowledged the dangers of their job and that awareness of the dangers and the consequences of making a mistake were significant predictors of depression and anxiety among crane operators. In a Norwegian study, 36% of offshore platform personnel felt unsafe with regard to helicopter transport, 34% felt unsafe with regard to evacuation facilities, and 24% were concerned about the risk of fire and explosion (Hellesoy, 1985). Finally, the risk of exposure to certain chemicals, including the inhalation of vapors, dust, and exposure to chemicals that are irritants to the skin, is frequently reported as one to the most harmfully perceived stressors among workers in the chemical industry (ILO, 1986).

To summarize this overview of the impact of job-related environmental factors on workers’ experience of strain, two overarching issues should be noted. First, as noted earlier, it is important to investigate both objective and subjective work conditions to develop a comprehensive profile of physical stressors in the workplace, as well as to understand workers’ reactions to these stressors. Although some research has explored both, the predominant focus has been on subjective perceptions of the work environment, although researchers do not always make clear the distinction between subjective and objective aspects. (We address this issue again toward the end of this chapter.) Second, it is evident that stressors do not operate in isolation from each other and that there can be additive (and perhaps interactive!) effects where several stressors are experienced concurrently. Unfortunately, however, and perhaps due to the constraints on conducting multivariable research within organizations, many studies have examined individual stressors (such as those identified above) in isolation, rather than considering their combined impact.

As with research on the other forms of stressors outlined in this chapter, more systematic assessment of the differential salience of environmental factors for worker strain and well-being needs to be conducted to determine which factors serve as the most potent stressors for various occupational groups.

**Organizational Roles**

Roles encompass the behaviors and demands that are associated with the job an individual performs. The importance of role-related strain was first underlined by Kahn et al. (1964), whose early investigations in this area have provided a platform and a framework for most subsequent research on role strain. According to Kahn et al., dysfunction in roles can occur in two primary ways: role ambiguity (lack of clarity about the role) and role conflict (competing or conflicting job demands). These two role stressors have been the most frequently investigated sources of job-related strain.

**Role Ambiguity**

As defined by Kahn et al. (1964), role ambiguity refers to unpredictability of the consequences of one’s role performance. Later conceptualizations have extended the definition to include a lack of information needed to perform the role, and the typical measure of this construct assesses both unpredictability of consequences and information deficiency regarding expected role behaviors (Pearce, 1981). Numerous studies have demonstrated a consistent link between substantial role ambiguity in the job and high levels of psychological strain (see, e.g., O’Driscoll & Beehr, 1994; Schaubroeck, Cotton, & Jennings, 1989).

**Role Conflict**

Similarly, role conflict, which reflects incompatible demands on the person (either within a single role or between multiple roles occupied by the individual), can induce negative emotional reactions due to perceived inability to be effective on the job (Schaubroek et al., 1989). Several studies have confirmed this detrimental effect of role conflict on both self-reported strain (O’Driscoll & Beehr, 1994) and physiological indicators of strain (Kahn & Byosiere, 1990). Typically, however, the association between role conflict and psychological strain is not as strong as that between ambiguity and strain (Jackson & Schuler, 1985), and further research is needed to tease out the impact of different forms of role conflict on worker attitudes and experiences. Quick and Quick (1984) differentiated four kinds of role conflict:

1. Intrasender role conflict: for example, when a supervisor or manager communicates expectations that are mutually incompatible
2. Intersender role conflict: when two or more people (e.g., supervisors, managers, colleagues, clients) communicate expectations that are incompatible
3. Person-role conflict: when an individual perceives a conflict between his or her expectations and values and those of the organization or key people in the work environment
4. Inter-role conflict: when a person occupies two or more roles that may have conflicting expectations or requirements (See the section “The Home-Work Interface” later in this chapter.)

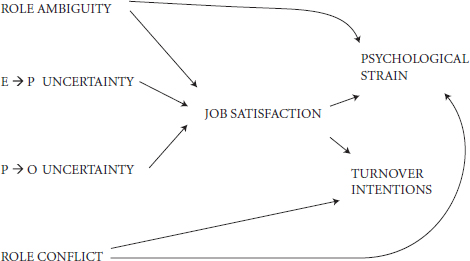
Although each of these forms of conflict has negative consequences, the nature of their effects, as well as mechanisms for alleviating them, will differ markedly.

**Role Overload**

A third role variable is overload, which refers to the number of different roles a person has to fulfill (see the above discussion on work overload). Not only can role overload lead to excessive demands on an individual’s time, but it also may create uncertainty about his or her ability to perform these roles adequately. Along with role ambiguity and conflict, overload has been found to be a major correlate of job-related strain (Cooper, 1987). In fact, Narayanan et al. (1999) found that work overload was mentioned more frequently by respondents as a source of strain than either role ambiguity or role conflict.

One potential explanation for the negative effects of these role variables on employee physical and psychological well-being is that they create uncertainty, which in itself is psychologically uncomfortable and, if persistent and at high levels, can result in emotional disturbance in the individual. Beehr and colleagues (Beehr, 1987; Beehr & Bhagat, 1985) adapted the expectancy theory of motivation to explain the diverse forms of uncertainty that may arise from role stressors. Specifically, role ambiguity, conflict, and overload may be linked with reduced effort-to-performance expectancy (E → P) because they create uncertainty among employees that their efforts will lead to satisfactory job performance, and with performance-to-outcome expectancy (P → O) because employees are unsure of the link between rewards and successful job performance.

O’Driscoll and Beehr (1994) found that these forms of uncertainty were significantly related to workers’ affective experiences, including dissatisfaction and psychological strain. In this study, job satisfaction functioned as a mediator of the effects of role stressors (especially ambiguity) and uncertainty on psychological strain and turnover intentions. That is, role ambiguity and uncertainty were related to job satisfaction, which in turn was associated with (reduced) psychological strain and turnover intentions (see Figure 2.1), although there was also some direct relationship between ambiguity and strain. Interestingly, O’Driscoll and Beehr found only a direct relationship between role conflict and strain, rather than one mediated by job satisfaction, as was the case for ambiguity and E → P and P → O uncertainty.

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**Figure 2.1.**   Direct and Mediated Relationships of Role Variables and Uncertainty with Psychological Strain and Turnover Intentions

SOURCE: Adapted from O’Driscoll and Beehr (1994).

Before turning to the next organizational factor, we would note that almost all research on role variables has been based upon self-reports of the amount of ambiguity, conflict, and overload that workers experience. From the transactional perspective, this is entirely appropriate because it focuses on individuals’ perceptions of their environment as the critical determinant of psychological strain. However, it would also be valuable to map these perceptions onto more objectively defined work conditions.

**Responsibility**

Responsibility has been identified as a potential stressor associated with workers’ roles in their organization. A distinction is made between responsibility for things (such as budgets or equipment) and responsibility for people (e.g., in a supervisory capacity). Though too much responsibility (exceeding a person’s perceived capacity to cope) is clearly a source of strain, lack of responsibility may also be stressful if the individual perceives this as work underload.

For some workers, responsibility for other people’s lives and safety is a major source of psychological strain. For example, a crane driver is aware of the potentially serious consequences of making mistakes (Cooper & Kelly, 1984). Offshore drilling crews also recognize the consequences of mistakes, the need to work as a team, and the need to watch over new employees. A mistake by a petroleum engineer on a rig can result in a blowout or explosion, which could cause large-scale injury or death, including the total loss of the drilling rig itself (Sutherland & Cooper, 1986). Similarly, responsibility for people’s safety may be a major factor in predicting risk of heart disease among air traffic controllers.

Further research needs to be undertaken to ascertain the relative effects of different forms (and levels) of responsibility and potential moderating factors. For instance, it seems clear that some individuals assume responsibility more readily than do others and cope better with the demands that responsibility carries, yet little is known about factors that enhance the positive outcomes of responsibility and alleviate potential negative outcomes. Two questions that demand further research attention are: Does responsibility for people (e.g., in a supervisory or managerial role) have more impact than responsibility for things (e.g., equipment) on individual strain, and what is the relationship between perceived (or felt) and actual levels of responsibility within organizations? To date, neither of these issues has been systematically investigated.

**Work Relationships**

Both the quality of interpersonal relationships and lack of social support (from others in the workplace) have been examined as potential sources of job-related strain. As we shall discuss in Chapter 5, there is some dispute over the role of social support as a moderator (or buffer) of the impact of stressors on individual strain and well-being. Nevertheless, it is clear that negative interpersonal relations and the absence of support from colleagues and superiors can be a major stressor for many workers (Motowidlo, Packard, & Manning, 1986; Narayanan et al., 1999). Conversely, having social support from others within the organization can directly alleviate psychological strain (Beehr & McGrath, 1992).

McLean (1979) suggested that social support in the form of group cohesion, interpersonal trust, and liking for a supervisor is associated with decreased levels of perceived job strain and better health. On the other hand, inconsiderate or nonsupportive behavior from a supervisor appears to contribute significantly to feelings of job pressure (Buck, 1972; McLean, 1979), and close supervision and rigid performance monitoring can also be stressful (O’Driscoll & Beehr, 1994). A critical issue for research on supervisor support is the optimal level of various kinds of support, including the provision of information and advice, guidance on how to perform the job, and feedback on job performance. Also of interest are differences between individuals in terms of the amount of supervision required. For instance, O’Driscoll and Beehr (2000) found that the extent to which subordinates had a need for clarity moderated the relationship between role stressors and psychological strain. It is evident that some individuals can tolerate uncertainties in the work environment more readily than do others and that their need for close guidance and supervision may therefore be lower. Further work is needed to tease out the complexity of relationships between social support and worker affective experiences, including strain (Cooper, 1998).

**Abrasive Personalities**

Some individuals may unwittingly cause distress to others because they ignore the feelings and sensibilities of others. Levinson (1978) labeled these individuals “abrasive personalities.” Usually they are achievement oriented, hard-driving, and intelligent, but they function less well at an emotional level. The need for perfection, the preoccupation with self, and the condescending, critical style of the abrasive personality induce feelings of inadequacy among other workers. As Levinson has suggested, the abrasive personality who is a peer is both difficult and stressful to deal with; when the abrasive personality is a superior, the consequences are potentially very damaging to interpersonal relationships and highly stressful for subordinates in the organization.

**Leadership Style**

As already mentioned, leadership style is a potential source of strain at work for employees. Specifically, autocratic and authoritarian leadership styles have generally been observed to induce strain among subordinates (Ashour, 1982; Seltzer & Numerof, 1988). As far back as the 1930s, Lewin, Lippitt, and White (1939) documented the effects of exposure to an authoritarian style of leader. A lack of consideration of employee needs, attitudes, and motivations, which characterizes a task orientation at the expense of relationships, has also been shown to create strain for many employees (O’Driscoll & Beehr, 1994). Task-oriented leaders may be less likely to engage in a participatory form of leadership or appreciate that feedback on performance and recognition for effort are also beneficial to the superior-subordinate relationship.

Reactions to an authoritarian style of leadership vary between individuals. Although some people appreciate a clear sense of direction and may prefer not having to make decisions relating to their work, the majority of employees would appear to value having input into (relevant) decision-making processes and some degree of self-determination in their workplace. As illustrated later in our discussion of Karasek’s demands-control model of job strain (see Chapter 5), lack of opportunity to exercise some judgmental discretion contributes significantly to psychological strain for most individuals. But the impact of different leadership styles in various work settings and on different occupational groups is certainly an area that requires further exploration.

**Career Development**

This category of potential stressors includes job insecurity (the threat of unemployment), perceived underpromotion or overpromotion within the organization, and a general sense of lack of achievement of one’s goals or ambitions. Recent years have witnessed a significant shift in the concept of career, with a wider array of different forms of employment contracts being negotiated (in some cases) or enforced. For many employees, the linear career development path is no longer a feasible, or perhaps even desired, option. Nevertheless, compared with some of the other factors described above, the relationship between career issues and strain has been less studied empirically. There is a growing body of evidence that a perceived lack of promotion opportunities and lack of progress in one’s career represent primary sources of job dissatisfaction (Rabinowitz, Falkenbach, Travers, Valentine, & Weener, 1983) and hence may function as major stressors for many people. There is also substantial evidence (Burke & McKeen, 1994) that, despite changes in societal attitudes concerning equal employment opportunities, women and minority groups still encounter organizational barriers to their career development, which inevitably will lead to higher levels of psychological strain for these groups of employees. Although many organizations are making efforts to enhance career development opportunities for women and minorities in particular, there is clearly a need for more significant progress in this area (Davidson & Cooper, 1994). Research on how best to foster these developments should be a priority for psychologists interested in career development issues.

**Job Insecurity**

One aspect of many people’s careers in the current, and future, employment context is the prospect or threat of job loss due to redundancy. With the increasing incidence of mergers and downsizing in industries around the world and with attempts to reduce levels of management within organizations, many individuals, especially those occupying middle-level managerial positions, face the threat of losing their jobs (Kozlowski, Chao, Smith, & Hedlung, 1993). Employment statistics from several regions and countries, including the United States, Canada, and Europe, illustrate that the rate of involuntary unemployment increased considerably in the late 1980s (Latack, Kinicki, & Prussia, 1995) and that this trend has persisted through the 1990s (Hanisch, 1999). Though all industries are affected by the prospect of redundancies, manufacturing is one industry where jobs are disappearing rapidly, and the corresponding rise in the number of jobs in the service sector is more likely to provide part-time and contract employment than tenured positions. Along with these changes is the introduction of new technologies that in many cases entail automation and consequently a simplification of jobs and deskilling of the labor force (Johansson, 1989; Korunka et al., 1995). To put it bluntly, in the new millenium job insecurity may be one of the single most salient sources of strain for employees, and its effects will be experienced at all organizational levels.

For individual workers, redundancy not only affects current and future income but also challenges the person’s general self-esteem, which is closely linked with job status and overall well-being (Burke & Cooper, 2000). As Latack et al. (1995) noted, “The impact of job loss is generally detrimental to individuals by virtually any criteria a researcher chooses to examine” (p. 312). In addition to its potential socioemotional effects on individuals, the threat of job loss has been linked to several serious health problems, including ulcers, colitis, and alopecia (Cobb & Kasl, 1977), as well as increased muscular complaints (Smith, Cohen, Stammerjohn, & Happ, 1981). Other negative outcomes of job loss and subsequent unemployment have been well documented in the literature (Hanisch, 1999). Brockner and his colleagues, for example (see Brockner et al., 1994; Brockner et al., 1997), have investigated the impact of redundancy (or the threat of redundancy) on three categories of people: victims (those who are displaced from their job), survivors (those who retain their job), and “lame ducks” (those who are next in line for retrenchment). In a series of investigations, Brockner and associates have found that the negative impact of redundancy can extend beyond those who are directly affected by it (the victims) to other organization members, both survivors and especially “lame ducks.”

Interestingly, the ultimate consequences of job layoffs for organizational productivity and effectiveness are far from clear-cut. Although managers and decision makers tend to subscribe to the view that making the organization “lean and mean” is essential to maintain competitiveness in today’s economic climate, evidence suggests that downsizing can have both positive and negative influences on the bottom line (Luthans & Sommer, 1999). For example, Cole (1993) noted that downsizing may result in a loss of organizational “memory” and sharing of knowledge across departments and organizational levels, disruption of routines that have built up over time and that ensure that the organization functions smoothly, and even a decline in personal relationships between employees and customers. In a study of the automotive industry in the United States, Cameron, Freeman, and Mishra (1993) observed negative outcomes such as increased interpersonal conflict (perhaps due to conflict between coworkers to retain their jobs) and resistance to change among employees, along with reduced employee morale and organizational commitment, factors that may contribute (negatively) to job performance and ultimately organizational effectiveness. Luthans and Sommer (1999) went so far as to suggest that “research on downsizing has shown an array of negative results and minimal positive results for organizations” (p. 50). Their study confirmed a decline in job satisfaction and organizational commitment among survivors of downsizing in a large medical rehabilitation hospital, although they were unable to systematically determine whether the overall performance of the organization had been affected.

Due to uncertainties in the employment market, individuals may remain in jobs that are disliked and that contain no prospects for advancement simply because there are no (or limited) alternative positions available. One study of personnel working for an offshore oil/gas contractor in the North Sea showed that 4l% of workers reported feeling trapped in offshore work because no suitable onshore work was available (Sutherland & Cooper, 1986). This perception of entrapment can lead to job dissatisfaction and reduced psychological well-being. Finally, the strain associated with the need to change and/or retrain is also likely to be manifested at a time of life when the person is most vulnerable. An individual under the strain of impending job loss realizes that in middle age (re)learning seems to take longer, energy is more scarce, opportunities are fewer, and employers may prefer to hire younger workers (Cartwright & Cooper, 1997).

In this new century, it is clear that the nature of employment and careers will be dramatically affected by such factors as globalization of the labor market, increasingly sophisticated technologies that will make many current jobs superfluous or even obsolete, and the need for firms and companies to seek new ways of enhancing their competitive edge and to maintain (if not increase) their market share. The days of near-full employment are long gone, and many countries (in both economically “developing” and “developed” countries) face the prospect of rising levels of unemployment. Research on job stress therefore needs to extend beyond the immediate workplace environment to consider employment as one of the elements that make up individuals’ lives. Hence, rather than focusing solely on strain that is manifested on the job, researchers will need to develop more comprehensive perspectives on the dynamic interrelationship between employment, family, and other elements of people’s lives. Such research must include consideration of broader economic and social issues surrounding employment and unemployment in an era when job security may become the exception rather than the norm. We will return to this issue in Chapter 9.

**Promotion and Career Advancement**

Even in situations where individuals may believe that their job is secure, issues related to advancement in one’s career or promotion within the organization are frequently cited as major sources of dissatisfaction and psychological strain (Jewell, 1998). Typically, strain is caused by a lack of advancement (or underpromotion), but in some cases the reverse may apply: Individuals feel promoted beyond their capabilities. This may occur, for example, when a person is promoted to the role of supervisor from the “shop floor” or is given new responsibilities for which he or she has received inadequate preparation or training. Both under- and overpromotion can have serious detrimental effects on individual well-being and satisfaction levels. Related to the above is the issue of career plateauing. Formulations of career development proposed in the 1970s (see, e.g., Osipow, 1973) suggested that career development occurred in stages, one of these being the plateau stage, when individuals experience a leveling off in their career and skill development and their career reaches a point of maintenance. Recent research suggests, however, that the earlier developmental models do not necessarily provide an accurate characterization of career choices and career change. Socioeconomic factors within society in the 1990s, along with changing values and interests, have resulted in careers that do not necessarily progress in stages (Hall, 1994), and indeed some employees may never experience a plateauing effect because (either voluntarily or involuntarily through redundancy) these individuals change careers before they reach a plateau. Hall and Moss (1998) have referred to this as the protean career. Nevertheless, even for individuals who remain in the same job or career, it is clear that continued development is preferred by the majority and that any plateau effect is likely to have negative consequences in terms of dissatisfaction and psychological strain.

**Organizational Factors**

Psychological strain that may be attributed to organizational factors is often due to the culture and management style adopted within an organization (Cooper & Cartwright, 1994). There are, of course, multiple organizational factors that impinge upon organizational members and may generate feelings of strain. Here all we can do is highlight some that have been observed in research investigating organizational-level stressors.

Hierarchical, bureaucratic organizational structures may permit little participation by employees in decisions affecting their work. Inadequate communication, especially between managerial and nonmanagerial personnel, can also contribute to employee strain. Studies of organizational climate (e.g., Guzley, 1992; O’Driscoll & Evans, 1988) have indicated that the content and nature of communication processes within organizations contribute to employee reactions to their job and the organization as a whole. Where communications focus on negative attributions about other personnel, cynicism regarding leadership and management of the organization, and attempts by employees to further their own interests at the expense of others, feelings of mistrust and lack of support are generated, in turn leading to increased strain (O’Driscoll & Cooper, 1996).

Lack of participation in the decision-making process, lack of effective consultation and communication, office politics, and no sense of belonging have all been identified as potential organizational stressors. Increased opportunity to participate, on the other hand, has been associated with greater overall job satisfaction, higher levels of affective commitment to the organization, and an increased sense of well-being, even though evidence for the effects of participation on job performance and productivity is less consistent (Leana & Florkowski, 1992; Sagie & Koslowsky, 1994; Wagner, 1994; Wagner, Leana, Locke, & Schweiger, 1997).

Research conducted on Karasek’s demands-control model supports these suggestions. Karasek’s (1979) original prospective study demonstrated that lack of decision latitude and freedom to choose one’s work schedule were significant predictors of the risk for coronary heart disease. Similarly, lack of consultation and feelings of being unable to make changes in one’s job are commonly reported stressors among blue-collar workers in the steel industry (Kelly & Cooper, 1981), as well as among offshore operators and drilling personnel on rigs and platforms in the U.K. and Dutch sectors of the North Sea (Sutherland & Cooper, 1986). In another study, poor organizational climate, job insecurity, and the employee’s relationship with the organization were all significant predictors of low psychological well-being among executives (Cooper & Melhuish, 1980).

A further organizational factor that has been closely studied is the extent of formalization of work and decision-making procedures, although the effects of formalization have been inconsistent and seem to vary between occupational groups. Whereas Organ and Greene (1981) found that formalization reduced role ambiguity among scientists but increased role conflict, Podsakoff, Williams, and Todor (1986) observed negative relationships between formalization and both ambiguity and conflict. Overall, it is apparent that clearly outlined formal work procedures may have positive benefits for employees (O’Driscoll, 1987) but that overly formalized organizational processes may be detrimental, particularly among professional groups.

Finally in this category, organizational politics also have a substantial impact on employee strain. In a series of interrelated studies, Ferris and his colleagues (Ferris et al., 1996; Zhou & Ferris, 1995) have noted strong relationships between employees’ perceptions of a negative political climate within their organization and their experience of psychological strain. Cropanzano, Howes, Grandey, and Toth (1997) also found a significant relationship between organizational politics and employees’ levels of strain.

Given the large range of organizational factors that have the potential to induce strain in employees, it is hardly surprising that few generalizations are possible. Lack of participation (in decision making), inappropriate levels of formalization of work procedures, lack of adequate communication within the organization, and organizational politics are all potential sources of strain, yet none function universally as stressors. Research needs to focus on the conditions under which these factors create a stressful environment for organizational members, as well as considering differential impacts on various levels and groups of employees. As we have noted in other places in this volume, the impact of these variables depends on the meaning and importance attached to them by individuals; hence, it is critical to explore individual perceptions and values relating to organizational processes.

**The Home-Work Interface**

Managing the interface between one’s job and various roles and responsibilities off the job is another potential source of strain (O’Driscoll, 1996). Sometimes referred to as work/nonwork conflict, this issue has received considerable attention from researchers in recent years (Cooper & Lewis, 1998). Changes in family structures, increased participation by women in the workforce, and technological changes (such as usage of portable computers and cellular phones) that enable job tasks to be performed in a variety of locations have blurred the boundaries between the job and life off the job for many workers and have created the potential for conflict to occur between job and off-job roles (Hill, Miller, Weiner, & Colihan, 1998). This inter-role conflict has consistently been linked with psychological strain (Frone, Russell, & Cooper, 1992; O’Driscoll, Ilgen, & Hildreth, 1992) and is especially prevalent among women, employed parents, and dual-career couples (Aryee & Luk, 1996; Brayfield, 1995; Greenhaus & Parasuraman, 1994; Williams & Alliger, 1994).

Greenhaus and Beutell (1985) outlined three fundamental forms of potential conflict between individuals’ jobs (or careers) and their family lives. One prominent form of conflict arises because people have finite resources in terms of time and energy, and demands from different roles will tax those resources. Gutek, Searle, and Klepa (1991) have labeled this the rational view because it presumes that the extent of inter-role conflict is directly proportional to the amount of time (or energy) expended in each domain. It has also been referred to as the utilitarian approach (Lobel, 1991) because it focuses upon the rewards and costs of investing time and energy in specific roles. The utilitarian model depicts life as a struggle between competing roles that have differential reward-to-cost ratios. From this perspective, conflict between roles is inevitable—the more time and energy required to perform specific roles successfully, the greater the extent of inter-role conflict. As noted by Lambert (1990), individuals may have to engage in a process of accommodation, where they limit or modify their involvement in one sphere to accommodate the demands of the other. For instance, intensive demands from the job may require them to significantly reduce their input into family life.

In addition to time-based conflict, Greenhaus and Beutell (1985) highlighted two other sources of inter-role conflict. One that is mentioned less often in the literature is the potential for conflict between role norms and expectations. Greenhaus and Beutell referred to this as behavior-based conflict. As well as competing for one’s time and physical energy, the attitudes, values, and behaviors required in one role may be incompatible with those needed in another. For example, in the work context an employee may be expected to be aggressive, ambitious, hard-driving, and task oriented. Successful job performance (and the rewards associated with such performance) may be contingent upon demonstration of these behavioral characteristics. In the home situation, however, being loving, supportive, accommodating, and relationship oriented may be considered essential to the development of a positive family life. Clearly, these opposing behavioral expectations may create tension within individuals as they make the transition from one environment to another.

A third form of potential conflict between roles is strain-based conflict that is induced by emotional interference from one domain to the other. In particular, job conditions (such as work overload, poor interpersonal relations, job insecurity, and lack of opportunity to exercise control and self-direction) can produce negative emotional consequences (reduced self-esteem, feelings of uncertainty, loss of a sense of competence) that impinge upon interactions within the family (Menaghan, 1991). These negative emotional reactions within the work environment can lead to expressions of irritability toward family members or withdrawal from family interaction to recuperate (Burley, 1995; Menaghan, 1991). Similarly, the strains of family life may carry over into the work context, although evidence of this is less conclusive (Higgins & Duxbury, 1992; Williams & Alliger, 1994).

Empirical work on the home-work interface illustrates that this is a significant source of strain for both women and men but that gender differences may exist. Two primary questions have been explored: (a) Are there gender differences in the amount or extent of job-family conflict experienced? and (b) Are the correlates of job-family conflict different for men versus women? For instance, Davidson and Cooper (1994) noted that, compared with their male counterparts, female managers are often confronted with additional pressures from both their home and job environments. Similar findings have been reported by Beatty (1996) and Wiersma and van den Berg (1991). However, research that differentiates between job → family conflict or interference and family → job interference has obtained less clear-cut evidence for gender differences in the amount of inter-role conflict experienced. For example, Frone et al. (1992) and Milkie and Peltola (1999) found no overall difference between men and women in job-family conflict, whereas Williams and Alliger (1994) reported higher levels of both forms of interference among women than among men.

In sum, recent studies do not uniformly confirm the existence of gender differences in the level and direction of inter-role conflict, and some in fact contradict the popular belief that family responsibilities are more likely to intrude upon women’s careers and job satisfaction (O’Driscoll, 1996). Nevertheless, it is evident that men and women do have different experiences. In particular, despite considerable shifts in societal attitudes and values surrounding gender roles, research indicates that women still shoulder the major responsibility for family and household activities, especially those related to child rearing. As suggested recently by Milkie and Peltola (1999), however, women may have developed more adaptive strategies for coping with these burdens and may be better able to juggle multiple demands from the job and family domains.

In any event, it is evident that inter-role conflict (in particular between job and family demands) is a major stressor for an increasing number of individuals, especially as economic pressures require people to spend more and more time in paid employment. Recent interest in job-family conflict has focused not just on the sources of this form of strain but also on strategies for alleviating it, including the use of flextime, on-site child care centers, and other “family-supportive” organizational programs (Kirchmeyer, 1995; Kramar, 1997). We also need to examine generational differences, comparing (for example) experiences of the “baby-boomer” generation (typically defined as those born between 1945 and 1960) and later cohorts. Research illustrates that there has been a significant increase in the number of multigenerational families in society, at a time when midlife individuals need to make provision for the onset of retirement and may themselves have health, relationship, and financial issues to contend with (Franks & Stephens, 1992; Higgins, Duxbury, & Lee, 1994). One consequence of this trend is that some generational cohorts may be expected to shoulder responsibility for the care of both their (typically adolescent or young adult) children and their aging parents (and in some cases grandparents!).

**Conclusion**

In this chapter, we have summarized the effects of a variety of sources of work-related strain that have been studied in stress research. This review has not been exhaustive but has highlighted some of the most commonly reported, and most intense, stressors that are experienced by workers. Some of these variables will be discussed further in Chapter 4, which examines factors that contribute to job-related burnout.

Two further issues need to be recognized when conducting research on potential stressors. First, as noted earlier, frequently stressors are not confronted in isolation from each other but rather occur in combination. For instance, a worker may simultaneously experience role ambiguity (perhaps due to lack of a clearly specified job description) and other stressors, such as interpersonal conflict with colleagues (over job boundaries) and pressures from a supervisor (concerned about lack of productivity). The combined impact of these stressors needs to be ascertained, not just their individual effects, and the whole (effect) may well be more than the sum of the parts!

Second, there is continuing debate in the job stress literature about whether stressors should be investigated “subjectively” or “objectively.” In support of the subjectivity position, the transactional model of stress emphasizes that the perception of a stimulus or event as threatening is critical for the experience of strain. Put bluntly, no awareness—no strain! The majority of stress studies in the occupational literature use self-reports of stressors and hence are based, either explicitly or implicitly, upon the assumption that subjective perceptions are the key to understanding stressor-strain relationships. On the other hand, stress management interventions, particularly those at the organizational level (see Chapter 7), are typically built upon a belief that certain stressors may transcend individual cognitions and attributions and can therefore be regarded as “objective.” Again, to put this view simply, stressors may be assessed in some objective manner that is independent of how particular individuals perceive them. Alternatively, researchers should focus attention on environmental features where there is some level of consensus among individuals that these events are stressors, rather than analyzing data solely at the individual level. Similarly, limitations associated with self-report data, particularly when measures of stressors and strains are all based upon self-reports, need to be taken into account. (This issue is discussed further in Chapter 8 of this book.)

A valuable debate on this topic is presented in a recent issue of the Journal of Organizational Behavior (1999, Vol. 20, No. 5), where arguments are presented for both the “subjective perception” view (Perrewe & Zellars, 1999) and the “objective environment” perspective (Frese & Zapf, 1999; Schaubroeck, 1999). We concur with comments made by Spector (1999) in his editorial introduction to this debate:

These experienced job stress researchers agree that the job stress process involves both subjective and objective aspects. The major disagreement is on where the major emphasis should be in future research. . . . Undoubtedly, progress will be made in this domain by paying attention to both objective and subjective factors, so that we can better understand how the environment affects people’s health and well-being. (p. 737)

As the nature and forms of jobs are continually changing, it is imperative that job stress researchers explore new kinds of stressors that may result from new and different working conditions. For example, as discussed briefly here, teleworking is a relatively new form of work that an increasing number of employees are engaging in, as organizations seek to increase the flexibility and efficiency of the labor force. The types of stressors associated with teleworking are only just beginning to surface, and the possible longer-term effects of this form of work are as yet unknown. Longitudinal investigations are needed to determine the types of stressors and outcomes related to teleworking and other newly emerging working arrangements. Chapter 3 explores in more detail the potential outcomes, for both individual employees and organizations, of job stressors.

Bailey and Bhagat (1987) drew attention to an important distinction in research on the impact of stressful work environments. They noted that one problem with research in this area is that often no differentiation is made between stressors that are short-term or one-off events (episodic stressors) and those that are ongoing (chronic stressors). They suggested that most research has focused predominantly on episodic events that might create strain for individual employees, giving relatively little attention to “chronic or ongoing situations that might plague an individual employee day in and day out” (p. 211). One possible reason for this bias could be that episodic events (such as a computer malfunction) and their effects are easier to capture in cross-sectional research designs, which form the basis of much job stress research. Whatever the reason, it is clear that a complete understanding of the phenomena that induce psychological strain among workers requires investigation of the full range of potential stressors, both short and long term.

Similarly, further research is needed on how individuals adapt and adjust to various job-related stressors and what organizations can do to offset the negative effects of environmental and psychosocial stressors in the workplace. In Chapter 6, we examine theoretical perspectives and empirical findings concerning individual stress-coping strategies, and Chapter 7 discusses stress management interventions at the organizational level. In our view, it is important to emphasize that the responsibility for stress management lies with both individual workers and employers and to explore how work environments may be constructed to minimize stressful experiences, as well as to alleviate psychological strain when it does occur.