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Terrorism

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In Oklahoma City in 1995, right-wing extremists Timothy McVeigh and Terry Nichols killed 168 people and injured hundreds more in a bombing of the Alfred P. Murrah Federal Building. Dr. Barnett Slepian, a physician performing legal abortions, was shot and killed in 1998 in Buffalo, New York, by James Kopp, an antiabortion militant. Revolutionary Armed Forces of Colombia (FARC) guerrillas kidnapped two brothers, French businessmen in Colombia, releasing one shortly after the abduction with a hefty ransom demand for the other. In what has been called the largest terrorist attack in history, suicide bombers commandeered four American passenger airplanes on September 11, 2001, and flew them into the Twin Towers of the World Trade Center in New York and the Pentagon in Washington D.C., killing an estimated 3,000 people and injuring another 250.

These are but a few examples of recent acts of terrorism. A common feature among them is that each act has been waged in or against a workplace or against individuals as a result of their occupation. Workplaces may be particularly attractive targets for terrorists for several reasons: (a) large numbers of people congregate in them, (b) they are present at predictable times during the day, providing a “social address” where an individual or group can easily be found (Barling, 1990), (c) attacks on workplaces will gain significant public attention (Scotti, 1986), and (d) workplaces may be perfect targets from an ideological perspective, as particular workplaces may be selected because they represent an ideology that runs counter to that of the terrorists (Drake, 1998). Given that these features of workplaces are unlikely to change, it is also possible to predict that acts of terrorism against workplaces will continue in the future.

The first dimension is perceived control, which refers to the extent to which individuals believe they have agency over stressful events at work. Generally, the greater one's perceived control in a stressful situation, the better one's subsequent well-being (Terry & Jimmieson, 1999). Extending these findings somewhat, it has also been suggested that incidents such as natural disasters involving a complete lack of control may result in less strain than incidents in which individuals' perception of personal control has been actively weakened by another person or group (Baum, Fleming, & Davidson, 1983). The second dimension in Barling et al.'s (2003) framework is the individual's causal attributions for the event. People who experience negative or unexpected events tend to search for an explanation for these events (Heider, 1958; Kelley, 1973). When an individual attributes the causes of negative events to external sources, sense of personal power may be undermined and well-being may suffer. Third, stressful events that are caused by another person's intentional attempt to harm the victim, as opposed to accidents or natural disasters, may be more detrimental to well-being (Barling et al., 2003). Fourth, different types of disasters are associated with different "low points," the point in time at which the individual no longer feels that the reoccurrence of the disaster is likely (Baum & Fleming, 1993). Individuals' distress will persist until the low point is reached so that the longer it takes to reach the low point, the more persistent the distress. As long as individuals believe that the terrorist act might occur or recur, the low point will not be reached. Finally, events that create uncertainty about one's future are more likely to be detrimental to well-being (Barling et al., 2003).

According to this model, terrorist attacks constitute a stressor that is highly likely to threaten well-being. Specifically, in a terrorist attack, people are likely to feel that their personal control has been limited or eliminated. Individuals may also tend to make an external attribution for the attack, perceiving that they were unable to exert agency over their own fate, with detrimental consequences to well-being. The intentional nature of the attacks may cause victims additional distress (e.g., North & Pfefferbaum, 2002; Smith & North, 1993; Rubonis & Bickman, 1991). The time taken to reach the low point after a terrorist attack may be prolonged, particularly if there are ongoing government warnings of the likelihood of recurrence (Barling et al., 2003; Baum, 1991). Finally, terrorist attacks can create an enormous amount of uncertainty about the future. Following an attack, people may live in fear of future attacks or face uncertainty regarding the future of their job, their organization, and their lives. Although the experiences of workplace violence and terrorism experienced at work often differ in terms of magnitude, the literature on workplace violence provides additional evidence for hypothesizing effects of terrorism on well-being. Specifically, the literature on workplace violence suggests that the fear of future aggression has been identified as a major consequence of experiencing or witnessing aggression or violence and is a central predictor of subsequent well-being (Barling, Rogers, & Kelloway, 2001; Budd, Arvey, & Lawless, 1996; Schat & Kelloway, 2000).

When Terrorism Exerts Its Greatest Impact

Existing research on terrorism has contributed much to identifying situational and individual difference factors contributing to the duration and severity of distress following a terrorist attack (e.g., Desivilya, Gal, & Ayalon, 1996; Rubonis & Bickman, 1991). With respect to situational factors, people who were directly victimized in the terrorist attack on 9/11 or who were in close proximity to the attack were more likely to experience extreme stress reactions than people whose involvement was more peripheral (Piotrkowski & Brannen, 2002; Schlenger et al., 2002). Similarly, people who personally witnessed the attacks were more likely to suffer psychological impairment than people whose exposure was limited to media reports of these events. In addition, people who have lost relatively more in a terrorist attack are more likely to suffer higher levels of distress following a terrorist attack (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002).

The extent of the disaster caused by the event is another important determinant of individuals' stress reactions. Specifically, the likelihood of adverse effects of a disaster will be greater when it results in a more extreme rate of injury, loss of human life or threat to human life, or more extensive damage to property and/or when it creates persistent and dramatic problems for the community (Norris, Friedman, & Watson, 2002). For example, in a review of 52 studies on the psychological outcomes following disasters, Rubonis and Bickman (1991) found that the rate of human casualties in a disaster is related to subsequent psychopathology among members of the victimized population.

Research has also identified a number of individual difference factors that may moderate a highly stressful experience such as terrorism and subsequent psychological outcomes. Characteristics such as negative affectivity (Houkes, Janssen, de Jonge, & Bakker, 2003) and, conversely, positive emotions such as gratitude, interest, and love (Frederickson, Tugade, Waugh, & Larkin, 2003) and empathy (Regehr, Goldberg, & Hughes, 2002) are related to strain after a traumatic event, possibly through the impact of affect on resilience (Frederickson et al., 2003). Demographic characteristics (e.g., gender, minority group status) may also make subsequent strain more likely. Having a preexisting disorder such as depression or anxiety may make an individual more vulnerable to the effects of terrorism on well-being (Silver et al., 2002). Finally, people tend to be motivated to see the world as a fairly predictable and safe place. A traumatic event such as a terrorist attack can seriously challenge this worldview (McFarlane & de Girolamo, 1996). To the extent that people feel that their perception of the world as safe, predictable, and within their control is lost, individuals may feel distress and become more vulnerable to psychopathology (Piotrkowski & Brannen, 2002).

The multivariate risk/resilience model (Freedy, Kilpatrick, & Resnick, 1993) was developed to explain individual reactions to disasters, but it can also be applied to other acute stressors as well (Byron & Peterson, 2002). This

model incorporates individual difference and situational factors before, during, and after the experience of an acute disaster that moderate an individual's reaction to the disaster. These stressors include personality characteristics (such as the individual's dispositional optimism) and situational factors (such as the extent to which the individual receives social support on an ongoing basis, targeted social support, or social support received in direct response to the disaster and the individual's exposure to the disaster) (Byron & Peterson, 2002). In an empirical study, Byron and Peterson (2002) examined the effects of these factors on individual psychological strain and job dissatisfaction following the terrorist attacks of September 11. They found that both targeted social support and degree of exposure to the disaster were associated with subsequent psychological well-being and strain, respectively, and that dispositional optimism and coworker support predicted job satisfaction.

The Effect of Terrorism on Well-Being

In this section we examine the effect of experiencing a disaster on personal well-being and work-related well-being. We then examine various factors that may moderate the effect of terrorism on well-being, and we look at the potential impact of terrorism on the organization as a whole. We hypothesize important effects largely on the basis of literature examining the effects of other (nonterrorism) acute stressors on well-being. At the outset, it is important to recognize that at present there is little to no empirical research specifically looking at the effects of terrorism at work on personal and organizational well-being. We present these topics as a way of initiating the process of conceptualization of potential outcomes and motivating future research. In doing so, we hope to provide some direction for future research on the impact of terrorism on the workplace. The topics covered herein are not meant to be exhaustive but are intended to provide an overview of some of the main psychological outcomes found to result from acute stress.

Effects on Personal Well-Being

By far, the bulk of empirical research examining the outcomes of terrorism has focused on the effects of terrorism on the well-being of people in the general population (e.g., North & Pfefferbaum, 2002; Silver et al., 2002). In the literature on terrorism, as in many literatures, well-being has largely been conceptualized in terms of the presence or absence of illness or distress (for discussion, see Inness & Barling, 2003). The most commonly examined indicators of well-being following stress include general psychological distress that may include symptoms of depression, anxiety and fear, emotional upset, loss of concentration, and sleep disturbance, as well as post-traumatic stress disorder (PTSD; North & Pfefferbaum, 2002; Hanson, Kilpatrick, Falsetti, & Resnick, 1995).

Of the research that has examined well-being following a terrorist attack, most studies have focused on the incidence of psychological distress in the *general population* in the months following a terrorist attack (e.g., Schlenger et al., 2002) and over time (e.g., Galea et al., 2002). With few exceptions (Byron & Peterson, 2002), empirical investigations focusing on *employees* or *organizations* that have experienced terrorism in their workplace are rare. The findings of studies on distress in the general population, however, may be informative for predicting the effect on well-being that employees may experience if their organization has been the target of terrorism. It is likely, however, that rates of distress in the general population will be conservative when compared with rates of distress within an organization that was directly targeted.

Nevertheless, an awareness of the effects of terrorism in general on well-being can provide an important basis for understanding workplace-based terrorism.

Posttraumatic stress disorder. A number of studies have suggested that people who are victimized by terrorist attacks may develop clinically significant symptoms severe enough for a diagnosis of PTSD (North & Pfefferbaum, 2002). Research suggests that acts of intentional malfeasance such as terrorist attacks are more likely than are accidents to result in PTSD. Data suggest that within 1 week of the attacks of September 11, 44% of a random sample reported being bothered "extremely" or "quite a bit" by the attacks, and approximately one in five people reported experiencing at least one symptom of PTSD (Schuster et al., 2002). A separate study by Piotrkowski and Brannen (2002) conducted 25 weeks after the attacks of 9/11 with a sample of people with relatively low levels of exposure to the attacks suggested that people reported an average of over four symptoms of PTSD, and 28% of the sample reported seven or more symptoms. A separate study with a sample of people living outside of New York City found that approximately 17% of the sample reported posttraumatic stress symptoms 2 months after the attacks and 5.8% had symptoms as long as 6 months after the attacks (Silver et al., 2002). Similar to research on subclinical psychological symptoms, research on PTSD suggests that the more centrally involved or proximal an individual is to an attack (Schlenger et al., 2002), the more extreme the events experienced (Shalev et al., 1998); and the shorter the length of time since the attack (Silver et al., 2002), the greater the likelihood of subsequent clinical diagnosis such as PTSD or major depression. This speaks to the heightened likelihood of negative psychological outcomes following an attack in which one's organization was directly targeted.

Vulnerability and helplessness. Empirical research suggests that in the aftermath of terrorism, one frequent response is a heightened feeling of personal vulnerability (Eidelson & Eidelson, 2003). Vulnerability reflects individuals' perception of being consistently in danger and having insufficient control over external threat to garner a sense of safety (Beck, Emery, & Greenberg,

1985). People with a relatively high perception of personal vulnerability tend to have concomitant levels of anxiety and may engage in catastrophic thinking, an exaggerated perception that their personal circumstances will substantially deteriorate at some point and that this fate is predestined and beyond personal control. Although moderate levels of anxiety may be functional when confronted with a severe acute stressor, very high levels can be a detriment to the individuals' overall quality of life.

A second outcome of the loss of perceived control that may follow the experience of terrorism in the workplace is a perception of helplessness, the belief that one's actions will fail to produce desired results, even with extensive effort and planning (Eidelson & Eidelson, 2003). Similar to perceived vulnerability, helplessness is often self-perpetuating, as the belief that one's actions are futile limits an individual's motivation to attempt new or challenging tasks.

Research on the duration of distress following a terrorist attack suggests that the negative impact of terrorism on an individual's fear of a future attack may linger. Many studies examining incidence rates of psychopathology and distress in a population proximal to a disaster site have shown elevated levels of distress that have persisted months after the attacks (Galea et al., 2002; Schlenger et al., 2002). A series of studies (Baum, Gatchel, & Schaeffer, 1983; Davidson, Baum, Fleming, & Gisriel, 1986) examined the psychological outcomes of residents who lived near Three Mile Island following the disaster in 1979. Psychological distress and a perceived loss of control were still apparent over 1 (Baum et al., 1983) and 2 (Davidson et al., 1986) years following the event for people who resided in the vicinity of the disaster.

Other research suggests that nearly 38% of a sample of 2,729 participants reported having fears of future attacks as long as 6 months after the September 11 terrorist attacks (Silver et al., 2002). Research examining sub-clinical psychological responses to the September 11 attacks suggests that even people who were not personally involved in the attacks suffered from recurring painful memories of the event (DeLisi et al., 2003; Schlenger et al., 2002), anxiety, fear of future terrorism and fear of harm to their family (Silver et al., 2002), and event-related strain (Byron & Peterson, 2002). For instance, in one study, fears of future terrorism were present in two thirds of the sample 2 months after the attack, and over one third of the sample still remained fearful after 6 months (Silver et al., 2002). In another study, having recurring memories of the attack was found to be the most common postattack outcome among New Yorkers (DeLisi et al., 2003). Other studies suggest that an increase in physical ailments can also be associated with a terrorist attack. For instance, a substantial increase in stress-related and respiratory illness emerged among members of the New York City Fire Department who worked among substantial dust and debris to provide emergency medical services following the attacks (Banauch et al., 2002).

Sense of loss. In the aftermath of a disaster, individuals can feel that they have suffered major losses, some tangible, others intangible. In a disaster, people

can lose physical resources such as their belongings (Freedy, Saladin, Kilpatrick, Resnick, & Saunders, 1994), they may grieve the loss of friends and coworkers, and they can also feel that they have lost psychosocial resources including a lost routine, a lost sense of control over their outcomes, and a loss of optimism and goals for the future (Smith & Freedy, 2000). In a study of victims of hurricane Hugo, loss of resources accounted for more variance in individuals' postdisaster well-being than their coping strategies. Perhaps more relevant to the types of losses one is likely to incur in an incident of terrorism in the workplace is that of psychosocial losses. For instance, in the terrorist attacks on 9/11, many people lost their entire workplace and many of their coworkers. Research has shown that perceptions of losses such as these are often concomitant with suffering through an acute traumatic event and can have a significant impact on postdisaster functioning (Norris Friedman, Watson, Byrne, Diaz, Kaniasty, 2002; Smith & Freedy, 2000).

Somatic complaints. Research on work stress suggests that the experience of stress may lead to somatic health complaints. The bulk of research on the physiological effects of work stress has looked at chronic stressors (e.g., Fox, Dwyer, & Ganster, 1993). Acute stressors and traumas, however, may also lead to physical ailments such as headaches and sleep disruptions (Braverman, 1992). Following a traumatic event such as a terrorist attack, individuals may suffer physical ailments as a direct result of injuries incurred during the attack or as indirect effects of the psychological trauma of the event. Indeed, one explanation for the increased absenteeism immediately following the attack in New York on 9/11 is the possibility that individuals' physical health had suffered as a result (Byron & Peterson, 2002).

Effects on Well-Being That Are Directly Related to One's Work Role

Role ambiguity and performance. Role ambiguity reflects a level of uncertainty or lack of clarity regarding one's job or role (Breugh & Colihan, 1994). Role ambiguity includes the uncertainty about one's responsibility, how to carry out that responsibility, how responsibilities are evaluated, and the consequences of not fulfilling one's role responsibilities (Eys & Carron, 2001). When an organization has been the target of terrorism, the work environment may be quite disorganized. If coworkers have been killed or injured, the resources required to perform one's job have been destroyed, or, as was the case in the attacks on September 11, the workplace itself has been destroyed, individuals may be unsure of how to go about performing their normal job-related tasks. Lacking clarity regarding one's job impairs people from accomplishing their job-related goals. When employees are unsure about what is expected of them, they may have difficulty plotting a course of action, and, as a result, their job performance may suffer (Beauchamp, Bray, Eys, & Carron, 2002).

Threats to self-efficacy. Self-efficacy reflects the belief that a person can organize and execute specific behaviors (Bandura, 1997). Efficacy beliefs are acquired through mastery experiences and a clear understanding of the behaviors and tasks that are required. In the face of a terrorist attack, the work environment may be quite chaotic and the precondition of understanding one's requisite behavior may be challenged. Perceived self-efficacy has also been found to affect job performance (Stajkovic & Luthans, 1998), and ultimately detriments in organizationwide performance may result. Bandura (1977, 1997) suggests that low efficacy beliefs can become a self-fulfilling prophesy as they discourage individuals from attempting or persisting at certain tasks. Unsuccessful performance merely serves to confirm negative beliefs about one's own ability and, therefore, further discourages the individuals from being motivated to persist on a task. Over time, this can lead to or perpetuate depression (Abramson, Seligman, & Teasdale, 1978). At the same time, however, self-efficacy beliefs could also have positive outcomes on work performance. High levels of preexisting self-efficacy have been found to buffer the negative effects of work stressors on well-being (Jex & Bliese, 1999). It remains to be seen whether these results extend to a stressor as extreme as workplace terrorism.

Absenteeism. Empirical studies on absenteeism distinguish between two main stress-related reasons for employee absences (Bakker, Demerouti, de Boer, & Schaufeli, 2003; Johns, 1997). One reason for absenteeism is employees' desire to withdraw from aversive circumstances at work. Employees who are absent for this reason tend to have relatively lower levels of job satisfaction and commitment and see absences as an escape from or protest against aversive characteristics of the work environment (Mathieu & Kohler, 1990; Sagie, 1998). Absenteeism may also be a way of recuperating from stress when individuals do not possess the resources required to deal with demands in the workplace. In this case, employees may not be dissatisfied with the work environment but instead use time away from work to recuperate from work-related stress caused by excessive job demands or from other personal difficulties such as psychological distress, physical ailments or injury, or other sources of diminished personal resources (Johns, 1997). The latter case may be more consistent with the increases in absenteeism following a terrorist attack.

Immediately following a terrorist attack, employee absenteeism may increase for a number of possible reasons. First, individuals may find it difficult to confront the workplace. For example, some people developed phobias that made it very difficult to confront the workplace following 9/11. Byron and Peterson's (2002) findings suggest that employees who experienced more strain following the 9/11 attacks were more likely to be absent from work in the weeks following the event. Second, employees who are physically injured may need to be absent from work in order to recuperate. Third, employees may become sick as a result of a compromised immunological system.

Fourth, employees' personal resources may be compromised, given the prevalence of various forms of psychological distress that tend to follow a terrorist attack. In the wake of a tragedy such as terrorism, employees may be proffering a great deal of social support to their colleagues. This may increase the likelihood that employees will experience emotional exhaustion or depression and require respite from the workplace (Bakker et al., 2003).

Although absenteeism has often been perceived as a negative organizational behavior following a terrorist attack, absenteeism may ultimately prevent turnover resulting from the accumulation of stress that can lead to chronic depression or disability (Bakker et al., 2003; Fredrickson et al., 2003). It may be preferable for employees to take time away from the workplace in order to recover as opposed to either remaining physically present and unable to concentrate on their work or leaving the organization, outcomes that have been found to be related to the experience of workplace violence (e.g., LeBlanc & Kelloway, 2002; Schat & Kelloway, 2000).

Prejudice and hostility. Following a terrorist attack, hatred for the attacker may generalize to hatred for other groups with characteristics similar to the attacker even if those groups do not support violence or have any obvious association with acts of violence. There are two theories that suggest that this may strain interpersonal relations within the organization between members of different demographic groups (Sauter, Murphy, & Hurrell, 1990).

Social categorization theory suggests that individuals assign people, including themselves, to social categories or groups (Tajfel, 1982) and generally tend to prefer members of their own social groups (Tajfel, 1978, 1982; Tajfel & Turner, 2001). How an individual defines the in-group (and thus the out-group) in a given instance is critical to determining against whom prejudice may be directed. One ramification of being targeted by terrorist action is that it may make in-group/out-group distinctions more salient, which may elicit prejudice, particularly if these distinctions are made on the basis of ethnicity. Following the attacks on 9/11, there were significant increases in documented cases of racism in the United States (Barling et al., 2003).

A second theory, terror management theory (Greenberg, Pyszczynski, & Solomon, 1986), concurs with these findings. Terror management theory suggests that the existence of culture serves two main functions: It provides the individual with a worldview through establishing a system of values, moral codes of conduct, and meanings that can be used to direct behavior, and it provides a gauge by which people develop their self-esteem as they evaluate their personal actions against these morals and codes (Greenberg et al., 1986). According to terror management theory, when individuals are confronted with their own mortality, biases against members of cultures other than their own may increase (Dechesne, Janssen, & van Knippenberg, 2000; Harmon-Jones, Greenberg, Solomon, & Simon, 1996) and can cause increases in negative reactions to people with different values or beliefs (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992). In the work

context, this may make victims of politically motivated acts such as terrorism less open to working with people from different backgrounds or organizations that support a different system of morality. By extension, it may be hypothesized that racially linked selection and promotion decisions may follow—a serious problem in its own right—and this may in turn put the firm at considerable liability for legal action or human rights complaints. In addition, organizational initiative, such as affirmative action might be adversely affected.

Potential Moderators of the Relationship Between Terrorism and Distress

Based on work stress research in organizational contexts, we know that some characteristics of the job situation moderate the effects of work stress on well-being. These include leadership, organizational support, and job involvement; and these variables may also moderate the stress of experiencing terrorism on work outcomes. Each of these will be discussed.

Transformational leadership. The moderating effects of sound leadership on strain have been noted by researchers (Dionne, Yammarino, Atwater, & James, 2002); indeed, it is during times of crisis that leaders can exact their greatest influence (Sivanathan, Barling, Loughlin, & Kelloway, 2003). Leaders can quell chaos and ambiguity in an organization by creating a vision for the future of the organization and for employees, providing social support, communicating a sense of hope, and keeping employees up-to-date on new developments as events unfold.

Transformational leadership is a process by which leaders empower subordinates to be agents of organizational change (Yukl & Van Fleet, 1992). Transformational leadership consists of four main dimensions. First, idealized influence occurs when the leader does what is best for the greater good of the organization rather than his or her personal preferences. Second, inspirational motivation occurs when leaders provide followers with a sense of meaning associated with the tasks that they are asked to be engaged in and a sense of optimism and enthusiasm for the tasks that they are asked to perform. Third, transformational leaders tend to provide intellectual stimulation to their followers, helping and encouraging them to question existing ideas and epistemologies and to innovate and make intellectual contributions to their tasks. Finally, individualized consideration occurs through the individual support, mentoring, and coaching of each follower.

There is accumulating evidence to suggest that transformational leadership substantially influences employee performance (Barling, Weber, & Kelloway, 1996; Dvir, Eden, Avolio, & Shamir, 2002) via both self-efficacy and social support (Chen & Bliese, 2002; Rhoades & Eisenberger, 2002).

Leadership can exert an influence on efficacy perceptions by enhancing role clarity among followers (Chen & Bliese, 2002) affecting, in turn, job performance (Stajkovic & Luthans, 1998). Leadership also affects employee performance by creating a sense of personal identification with the leader and the work unit, thus motivating performance (Kark, Shamir, & Chen, 2003).

Perceived organizational support. Perceived organizational support refers to employees' subjective perception of the extent to which their work organization values their contributions and cares about their well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Rhoades & Eisenberger, 2002; Shore & Shore, 1995). Organizations and their representatives can provide a variety of supportive functions including emotional support involving caring and empathy, instrumental or tangible support, informational support or guidance in finding a solution to a problem, and appraisal support involving providing information relevant to self-evaluation (see Wills, 1985, for full discussion). Organizationally supportive practices such as supportive supervision affect the extent to which the individual has control over his or her job and life, which in turn has positive implications for reducing stress levels (Thomas & Ganster, 1995); and individuals with high perceived organizational support are less likely to seek out and accept jobs in alternative organizations (Eisenberger, Fasolo, & Davis-LaMastro, 1990). Research suggests that organizational support buffers the effect of stress on somatic tension, general fatigue, and burnout (Cropanzano, Howes, Grandey, & Toth, 1997) and produces relatively better psychological outcomes overall. It has been suggested that economic, counseling, and information support may all be of assistance to victims. Following the terrorist attacks of 9/11, some organizations provided tangible support (e.g., assistance with accommodation), with anecdotal reports suggesting that positive consequences ensued for the recipients (Barling et al., 2003).

Job involvement. Job involvement refers to the extent to which employees psychologically identify with their jobs (Probst, 2000) or consider the job central to their lives (Kanungo, 1982; Lodahl & Kejnar, 1965). Employees who have high levels of job involvement are more strongly affected by their work experiences. Although we are aware of no research that has examined job involvement as a moderator of the relationship between experiencing terrorism and subsequent strain, some research has suggested that people who are high in job involvement are more likely to experience health problems as an outcome of workplace stress (Frone, Russell, & Cooper, 1995) or negative behavioral and physical outcomes as a result of job insecurity (Probst, 2000). This research suggests that people who are relatively more involved in their jobs experience work events with greater intensity. In light of this evidence, employees with a high level of job involvement may respond more intensely to the experience of terrorism at work.

Terrorism and the Organization

The functioning of the organization may suffer in several ways as a result of a terrorist attack. Organizations may suffer direct and indirect financial costs as a result of terrorism. These costs may be incurred when organizations lose members through death, injury, or turnover, making it necessary for organizations to hire, socialize, and train new employees. Organizations may also need to assist workers with medical or psychological treatments. This may involve the use of in-house employee assistance programs or may involve making payments for these services to external treatment centers. These financial costs to the organization may lead to other organizational problems to the extent that attention is diverted from other workplace issues (Van Fleet & Van Fleet, 1998).

A second way that organizations may be affected by terrorism is via the reciprocal relationship between employee and organizational well-being (Tetrick, 2002). When employee well-being suffers, there is likely to be concomitant declines in organizational productivity (Jex & Bliese, 1999). Increases in employee absenteeism or turnover are also likely (Byron & Peterson, 2002; Van Fleet & Van Fleet, 1998) as people may be unable to concentrate on their work, may want to stay at home with family members, or may be fearful of returning to work and experiencing another attack. Others may be physically incapable of working as a result of injury (Van Fleet & Van Fleet, 1998). Organizational responses to a disaster such as terrorism may also have an important effect on individual well-being. Employees may expect their organizations to take responsibility for their well-being following a disaster. Following the 9/11 attacks, employees were more satisfied if their company exhibited compassion through means such as sending out empathetic companywide e-mails or organizing fundraisers or blood drives (Byron & Peterson, 2002; Dutton, Frost, Worline, Lilius, & Kanov, 2002).

Third, an individual does not have to be a member of an organization that has been targeted by terrorists to experience psychological distress following an attack. Some people work in occupations that force them to deal with the aftermath of a terrorist disaster. Such is the case for occupations such as investigators, emergency service personnel, and body handlers. One study examined outcomes of the Oklahoma City bombing on people whose job it was to handle the bodies of the deceased, and found they experienced subsequent increase in alcohol consumption and physical ailments (Tucker et al., 2002).

Other people may work in organizations that are similar to the one targeted for attack. People in these organizations may feel an increased level of vulnerability and fear of a future attack. For instance, people who work in commercial aviation may experience anxiety after a terrorist attack on another airline. Although this issue has not been addressed directly, research has suggested that following a terrorist attack, the general public tends to fear future attacks (Silver et al., 2002). It is therefore reasonable to expect

this anxiety to exist in at least comparable levels among people who are in similar organizations or occupations to those targeted by terrorists.

Research Issues

Conducting research on the immediate psychological effects of a terrorist attack poses both practical and ethical challenges. First, given that terrorism is by its very nature unanticipated and the aftermath of terrorism can be so chaotic, it would be unlikely that data collection strategies would be in place immediately following an attack. The time needed to begin data collection may therefore preclude early assessments of psychological distress. Second, even if it is possible to quickly initiate data collection, considerations would need to be made regarding the ethics of collecting data with a sample of people who have recently been the target of terrorism. Ideally, researchers would wait until their sample population has dealt with the practical problems associated with the aftermath of the disaster to begin data collection (North & Pfefferbaum, 2002). Third, ethics also plays a role in conducting laboratory investigations. Given that the effects of experiencing terrorism can evoke a significant amount of stress, attempting to elicit this level of stress in the laboratory is likely to be precluded on ethical grounds (Barling, Bluen, & Fain, 1987). Finally, another consideration in research on terrorism is the heterogeneity of various types of terrorism, terrorists, the terrorists' reasons for attacking a given organization, and their methods. It is too early to hypothesize whether these variations may moderate the relationship between experiencing workplace terrorism as a stressor and subsequent strain on the part of the target. This may pose a potential limitation on the generalizability of research findings.

The nature of the challenges inherent in conducting research on terrorism reinforces the argument for regular surveillance of workplace stress and related disorders (Sauter et al., 1990). When we have regular collection of data on stress and related conditions, we optimize the chances of having good "pre" data from which to assess the effects of a terrorist attack or disaster. It might also suggest the need to adopt an opportunistic strategy whereby studies are prepared a priori and initiated should a terrorist attack occur.

Implications for Organizational Practice and Policy

The organization has a critical role to play in facilitating recovery of a devastated workforce. A variety of organizational responses may be required, and the best strategy for implementing these responses may require having the necessary infrastructure in place prior to a terrorist attack including a plan for a response to such an event.

Formal organizational responses to terrorism should include the use of employee assistance programs (EAPs). Although efficacy of EAPs following a terrorist attack has yet to be established, the assistance offered by these programs has been confirmed in studies on other stressors (for a detailed discussion, see Cooper, Dewe, & O'Driscoll, 2003). Following a terrorist attack, EAPs may provide employees with easily accessible counseling and support, identify symptoms that may indicate serious distress or psychopathology, and provide treatment or referrals for employees suffering trauma. Organizations, in conjunction with EAPs, also need to identify people who may be at higher risk for subsequent strain following a terrorist attack, such as people who sustained injury or who were close with people who suffered or died. Outreach services may be a vital conduit to access at-risk populations (Miller, 2002).

Developing an emergency response plan may also help employees retain or regain a sense of personal control before, during, and following a traumatic event such as a terrorist act. Training people to maximize their safety and help others in need may increase chances of escape from potentially violent situations (Van Fleet & Van Fleet, 1998). These formal responses to emergency situations can give employees reason to feel that their organization is supportive of their needs, and this perceived support may in turn encourage employees to demonstrate citizenship to the organization.

Should an act of terrorism occur, workplaces are responsible for providing on-scene mass casualty intervention. Immediate and short-term responses may include critical incident stress debriefing (CISD) that can be administered through workplace EAPs. CISD is a structured group meeting facilitated by a trained CISD team and involving only the personnel directly affected by the critical incident. The purpose of the debriefing is to mitigate acute stress resulting from traumatization and accelerate the normal recovery of ordinary people who are suffering through typical but painful reactions to an abnormal event. CISD is typically conducted 24 hours after the event by a trained CISD mental health professional. It is an early response intervention and not intended to substitute for psychotherapy or to act as a stand-alone intervention (Everly & Mitchell, 1995). Nevertheless, a recent meta-analysis suggests that CISD is an effective strategy for reducing acute stress in a wide variety of stressful events (Everly & Boyle, 1999).

On an ongoing basis, the workplace can act as a conduit of information for survivors of an attack. Lack of information can be potentially traumatic and can be harmful if rumors lead to panic. Communication networks within the organization and between the organization and the community can facilitate timely information.

Summary

The intent of this chapter was twofold. First, we provided an overview of the extant research on terrorism, particularly as it relates to stress and well-being.

Second, we hoped to extend the existing conceptualization of terrorism to include its potential effects on the workplace, particularly in light of the fact that terrorist attacks are often targeted at workplaces or at employees because they hold a particular occupational position. Overall, research on terrorism suggests that terrorism has been found to exert substantial effects on individual well-being as well as costs to the organization. We encourage future empirical examinations to delve more deeply into the effects of terrorism on what may be considered the crossroads of individual and organizational well-being: the individual's work experiences following a terrorist attack.

Workers and workplaces have been and likely will continue to be targets of terrorism. The threat of terrorism poses tremendous challenges to both employees and employers. How employers prepare for and respond to such events will have critical consequences for the health and well-being of both employees and organizations.

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