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Disaster Psychology

Dispelling the Myths of Panic

By Paul Gantt and Ron Gantt

The role of a safety professional within an organization is to protect employees from workplace hazards and to minimize risks in all situations. In that capacity, much of a safety professional's time is spent assessing the hazards of employees' normal work functions. Psychological concepts have even been brought to bear on the complex question of how to influence human behavior to minimize incidents. Behavior-based safety and similar psychology-based programs are implemented to understand and manipulate employee behavior. The underlying concept in many of these situations is that safety programs based on employees' natural tendencies are more likely to succeed.

In contrast, not much time or effort is expended to identify and understand employee behavior in emergency and disaster scenarios. Most safety plans run the spectrum from doing the minimum required by OSHA and other regulatory bodies, to programs that mimic professional response organizations and agencies. However, little consideration is given to the natural tendencies of human response in emergency and disaster scenarios. The implication is that employee behavior is expected to conform to the organization's emergency action and response plans. One can easily see the inherent flaw in such an approach.

Recent research and thinking related to disaster scenarios highlights the first disaster myth to

be discussed—the myth of the “natural” disaster. Certainly the specific occurrence of a natural disaster, such as a tornado or an earthquake, cannot be predicted and, therefore, an element of natural randomness is

inherent, leading many to believe that since the event is random so are its consequences. However, as Park and Miller (2006) note, the effects of natural disasters cannot be easily separated from consequences of human choice and action.

In the simplest of terms, the act of living in an area prone to natural disasters (e.g., tornadoes in the Midwest, earthquakes in California, hurricanes in the Gulf Coast) puts one at a higher risk than average. Many more complicated variables, such as the level of emergency preparedness within an organization or community, the socioeconomic culture, as well as psychosocial aspects affect consequences in disaster and emergency scenarios (Perry & Greene, 1982). As Gantt (2008) notes, risk exists when a hazard is mixed with an exposure (e.g., human presence). The actions of people within an organization and community can either increase or decrease their risk of exposure to and consequences of the threat posed by an emergency or disaster.

Some variables are beyond control of the safety professional, such as the socioeconomic culture within an area and, to a large extent, an organization's location. However, affecting the emergency preparedness of an organization is often within the job description of safety professionals. Therefore, to minimize the risk to employees in disaster and emergency scenarios, safety professionals and emergency managers should design emergency action and response plans that are as realistic and effective as possible. This should include a thorough understanding of expected human behavior in disaster and emergency scenarios based on empirical information. As Auf der Heide (2004) notes, “It is more effective to learn what people tend to do naturally in disasters and plan around that rather than design your plan and then expect people to conform to it” (p. 365).

Fortunately, more than 60 years' of empirical research on human behavior in disasters and emergency scenarios is available. However, the findings from this research, although prevalent in the behavioral science community, has not affected public consciousness, as evidenced by the perpetuation of numerous myths regarding human behavior in disaster and emergency scenarios (Quarantelli, 2008). This article seeks to bridge the gap between the behavioral science community and safety

IN BRIEF

- Research regarding human behavior in disaster and emergency scenarios contradicts commonly held beliefs regarding the propensity for people to panic and perform other antisocial behaviors.
- Empirical data show that typical human behavior in disaster and emergency scenarios is prosocial, based on social relations and norms.
- Although social, typical human behaviors in disaster and emergency scenarios can lead to challenges for SH&E professionals and emergency planners.
- Recommendations for developing emergency plans based on typical human behaviors in disaster and emergency scenarios are discussed.

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professionals, particularly related to supposed panic behaviors in disasters and emergencies. This article is not an exhaustive review of all current thinking related to human decision making and protective behavior in disasters and emergencies; rather it is a call to safety professionals to further understand human disaster and emergency response behavior.

Perceived Human Behavior in Disaster Scenarios *The Myth of Panic*

One enduring concept regarding human behavior in disaster scenarios is the concept of panic. The general conception of most emergency planners, Hollywood film and television writers, and the public is that community and social structures break down in a disaster, and that the average person will respond with self-interested survival behaviors at the expense of all others, generally seen as an antisocial, nonrational flight from the perceived threat. The expected behavior of an individual in a disaster situation is commonly referred to as panic, although other antisocial behaviors are mentioned as separate potential behaviors, such as “the disaster syndrome” and criminal behavior,

such as looting (Quarantelli, 2008).

In contrast, prosocial and rational behaviors are seen as the exception to the panic rule.

One significant problem with studying the concept of panic is the lack of a standard definition. Behaviors described as panic include lynch mobs, suicidal epidemics, individual and collective anxieties, plundering troops, spy hysterias, military retreats and surrenders, social unrest, war, psychotic behavior, mass hysteria, animal stampedes, confused voting behavior, orgiastic feasts, the activities of war refugees and group tensions (Quarantelli, 2008). Even researchers have difficulty finding a clear definition. Definitions range from “uncontrolled flight” to cognitive states or inappropriate perceptions leading to irrational behaviors (Clarke & Chess, 2008). For the purposes of this discussion, the definition found in the *Oxford English Dictionary* will be used: “excessive feeling of alarm or fear . . . leading to extravagant or injudicious efforts to secure safety.”

Consistent empirical research from social scientists and disaster researchers has shown that the concept of panic and the belief that individuals naturally engage in other antisocial behaviors during disaster scenarios is, at best, overexagger-

PHOTO COURTESY JUSTIN HOBSON



Research has shown that the concept of panic and the belief that individuals naturally engage in other antisocial behaviors during disaster scenarios is, at best, overexaggerated.

ated. Some social scientists even advocate the removal of the concept of panic altogether from the discussion of human behavior in disasters, believing that other psychological and sociological concepts account for panic behaviors more thoroughly (Quarantelli, 2008).

Case Study: The Beverly Hills Supper Club

In 1977, a fire at the Beverly Hills Supper Club in Southgate, KY, resulted in 164 deaths. Newspapers at the time carried headlines such as “Panic Kills 300”; “Panic and 300 Stampede to Death”; and “A Killer Called Panic” (Auf der Heide, 2004). Interviews with survivors also refer to “panicky behavior” by those in the club. However, an investigation by NFPA found that widespread panic did not occur during the fire and was likely not the cause of the fatalities (Keating, 1982).

A review of behaviors that occurred during the fire points a strikingly different picture than one of panic. Upon discovering the fire, Supper Club staff attempted to put it out with extinguishers, despite not receiving any fire emergency training (Auf der Heide, 2004). Staff members, especially waiters and waitresses, returned to their posts and helped those patrons evacuate (Keating, 1982). Most deaths occurred in the Cabaret Room, where, even after the fire was announced, the comedian on stage continued to perform. Patrons did not realize the seriousness of the fire until it was too late. There was no evidence to suggest that any deaths resulted from being trampled underfoot.

Numerous examples of disaster and emergency scenarios yield similar results. In the aftermath of the 1906 earthquake in San Francisco, CA, Jack London noted, “There was no hysteria, no disorder . . . I saw not one woman who wept, not one man who was excited, not one person was in the slightest degree panic-stricken” (Auf der Heide, 2004, p. 345).

In 1989, after an air crash in Sioux City, IA, the fire chief noted the lack of chaos and confusion, and pointed to how important survivors were in assisting the rescuers in saving others’ lives. When the first floor of the Mental Health Building of the Los Angeles County Olive View/UCLA Medical Center collapsed, some of the more psychotic patients became more rational during the rescue efforts and helped other patients. After some time passed, they relapsed back to their baseline levels of psychosis. Even the famous example of panic of the radio broadcast of *The War of the Worlds* that supposedly induced panic-stricken citizens to literally run for the hills was calmly listened to by 85% or more of listeners who simply heard the broadcast as a radio show (Quarantelli, 2008).

When People Panic

More than 60 years of empirical research indicate that the behavior described by most people

as “panic” is extraordinarily rare. However, while rare, panic is not impossible. Although some disagreement exists on the exact conditions that evoke panic in individuals, researchers have identified key environmental and situational cues which generate and facilitate panic behavior. These include:

- 1) perception of an immediate great threat to self and/or significant others;
- 2) belief that escape from the threat is possible, but routes are rapidly closing;
- 3) a feeling of helplessness in otherwise dealing with the threat, particularly when others are not seen as able to help (Auf der Heide, 2004; Quarantelli, 2008).

Note that it is the perception of these events that determines whether an individual will panic, not the reality. If one perceives that escape routes are closing, then s/he is more likely to panic, whether escape is actually impeded. Additionally, and interestingly, if no hope of escape is possible, such as in a mine collapse or a submarine emergency, panic does not occur.

Case Study: The Titanic & The Lusitania

On April 14, 1912, the RMS *Titanic* collided with an iceberg, sinking within 2 hours and 40 minutes, killing 1,501 people in the process. On May 7, 1915, the RMS *Lusitania* sank after a torpedo attack from a German U-boat. The ship sank in only 18 minutes, killing 1,313.

A recent study comparing the statistics (sex, age, social status, economic status) of the passengers to the survivors yields interesting findings. Although both ships carried passengers of similar makeup in terms of age, sex and socioeconomic status, the survivor statistics are strikingly different. On the *Lusitania*, where the threat was imminent, those in their prime age (16 to 50) had the greatest chance of survival, regardless of other factors (although men were slightly more likely than women to survive). On the *Titanic*, where the threat was much less imminent, women were more than three times more likely to survive than men, especially women travelling with children. Furthermore, those travelling in first class, presumably those in the higher socioeconomic class, had a 50% more likely chance of surviving than those travelling in second class and more than twice the chance of third-class passengers of surviving (Frey, Savage & Torgler, 2001).

Although more research is needed to extrapolate firm conclusions, it seems that social norms ruled the day in the sinking of the *Titanic*, while the sinking of the *Lusitania* was marked by what might be deemed more of a panic-stricken scenario. The differences may be due to the time variable. The speed with which the *Lusitania* sank created a more helpless situation for passengers, perhaps resulting in more behaviors that violated social norms, leading to panic behavior.

Other conditions seem to contribute to an increased potential for panic behavior as well. For example, panic is more likely in groups of strangers than in groups with preexisting social bonds (Mawson, 2005). Furthermore, panic is more likely

to occur in environments where panic is expected (Quarantelli, 2008). A commonly accepted taboo is yelling “fire” in a crowded theater, implying that panic is the natural result. As a result, panic is more likely to occur in a crowded theater because the behavior is expected.

Why People Believe In Panic

A telling quote from a fire department official following the bombing of the Murrah Federal Building in Oklahoma City, OK, is enlightening about use of the word *panic*:

“Absolute, unrestrained panic was rampant in the building during the first hour to hour and a half of the incident. The building had so many access points that it was very difficult to keep anyone from *entering* [emphasis added]” (Auf Der Heide, 2004, p. 342).

A fundamental concept in psychology, particularly as it relates to social interactions, is “you see what you believe.” People respond to reality not as it is, but as they construe it to be (Myers, 2008). In the process of human cognition, there is a key stage between the objective sensing of a stimulus and the rational appraisal of cues—perception. Research consistently shows that perceptions dramatically influence beliefs. Rather than believing what one sees, one sees what s/he believes.

Furthermore, what a person believes is colored by numerous biases and mental shortcuts that lead to predictable inaccuracies (Kahneman, 2001). One of the more powerful biases in human thinking is described as the *availability bias*, which Kahneman (2001) describes as the tendency to overweight the likelihood or frequency of an event. Simply put, the easier it is to envision examples of an event, the larger the overestimation of the likelihood or frequency. Given that panic is an infrequent event, one would assume that the availability of examples of panic would be small, leading to an availability bias toward discounting panic.

However, the overwhelmingly normative and prosocial behavior of individuals during emergencies means that this behavior is rather mundane, whereas panic behaviors are abnormal, meaning that individuals will more likely attend to those behaviors, making them more memorable (Proventi, 2012). Paradoxically, the relative rarity of panic may contribute to the misperception belief that it is common.

Additional considerations may contribute to the belief in panic as a likely behavior in disaster and emergency scenarios. The lack of a consistent definition of panic leads to inconsistency in use, as exemplified by the quoted fire official during the Oklahoma City bombing. Panic, typically described as antisocial flight, was used to describe movement toward the disaster area, most likely to boost the rescue-and-recovery efforts.

Panic is frequently used interchangeably with fear to describe people’s emotions. And certainly the preceding discussion on the rarity of panic is not to suggest that fear is uncommon in disasters and emergencies. But the words must be differ-

entiated for safety professionals and emergency planners. Fear, despite being a powerful motivator, does not necessarily lead to panic behaviors in disaster and emergency situations. The distinction is important.

A recent analysis of numerous studies related to first responder role strain, conflict and abandonment notes that although research consistently suggests that role strain and role conflict are common, disagreement exists regarding the frequency of role abandonment. Perception studies, where first responders are given scenarios of natural and technological disasters and asked questions related to role abandonment, frequently estimate high levels of role abandonment in these scenarios; whereas, behavioral studies that retrospectively measure role abandonment in actual natural and technological disasters identify role abandonment as being extraordinarily rare (Trainor & Barsky, 2010). The implication is that expectations of behavior during disasters and emergencies may not be consistent with actual behavior during disasters and emergencies.

Additionally, one must consider that the panic label is attached frequently from an armchair position. Humans rarely can acquire all relevant information before acting, even more so in emergency situations, when they must make decisions quickly based on incomplete and sometimes inaccurate information. Naturally, such situations will lead to behaviors that, given all relevant information, are not optimal.

However, that doesn’t mean that the behavior was irrational given the situation and information available. Frequently, behaviors attributable to irrational panic are the behaviors of individuals acting in what they believe is the most rational way given the information present and the perceived resources at their disposal (Perry & Lindell, 2003a). This may include fearful evacuation from an emergency, which may be argued is not irrational panic but sometimes one of the most rational responses.

Common Behavior in Disaster Scenarios

Clearly, panic-based behaviors are not the norm in a disaster scenario. This begs the question: How do people behave in emergencies and disasters? Disaster and emergency behavior is a function of the decision-making process that individuals use to identify a proper response. According to Perry and Greene (1982), individual decision making includes three important milestones—risk identification, risk assessment and risk reduction.

Risk Identification

Risk identification involves the individual identifying that a threat exists. If a person sees no risk, then the undertaking of corrective and/or protective actions is impossible. Research indicates that factors such as the credibility of the authority delivering the message and environmental cues (e.g., the presence of smoke in a fire, rain during a flood) are important factors in risk identification (Perry & Greene, 1982).

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In addition, individuals often seek confirmatory information from others, particularly loved ones. The presence of others in the area can facilitate risk identification; however, research suggests that the presence of others can hinder identification of an emergency (Myers, 2008). Other individuals in an area decrease the likelihood that someone will notice an emergency warning message.

Additionally, a propensity to overestimate others' abilities to identify fear that an individual is feeling (i.e., the illusion of transparency) leads individuals to assume that if others are not equally as afraid, then the situation must be less threatening than first identified (Myers, 2008). This is seen when a fire alarm sounds unexpectedly in a building. Individuals seek confirmatory evidence, rather than immediately evacuating as intended. Therefore, research indicates that multiple redundant messages and warnings will increase the likelihood that individuals will correctly identify risks and, therefore, take appropriate protective measures (Perry & Greene, 1982).

Risk Assessment

Once the existence of a threat is identified, an individual must next assess the likelihood and severity of its consequences. According to Perry and Greene (1982), three factors directly affect an individual's ability to properly assess the risks from a disaster or emergency. These include credibility of the authority; the warning message itself, including any risk relevant information; and past experience with similar scenarios.

Experience with emergencies perceived as similar can be the most problematic for emergency planners, given that past experience is not a good predictor of the severity of a situation (Perry & Greene, 1982). However, because of the availability of perceived relevant information, past behavior that is perceived as successful will likely be repeated. If the individual believes that a risk is present, but that its likelihood and/or severity are low enough, then no protective action will be taken.

For example, many citizens in New Orleans, LA, failed to heed evacuation warnings preceding Hurricane Katrina because of previous warnings when a hurricane did not hit the area or the storm that did hit had minimal impact. These warnings may have provided citizens with a decreased belief in the credibility of hurricane warnings and a decreased belief in the likelihood and/or severity of consequences involving Hurricane Katrina.

Risk Reduction

Once a belief regarding the existence, likelihood and severity of a threat from a disaster or emergency is gained, an individual attempts to determine protective measures to reduce the potential risks. For an individual to undertake protective actions, s/he must first believe that protective actions will minimize negative consequences; that such actions are possible in the given circumstances; and that protective actions will sufficiently minimize negative consequences (Perry & Greene, 1982).

For example, if an individual believes that nega-

tive consequences are inevitable because of insufficient protective measures or lack of ample time or resources to initiate protective measures, then the individual will do nothing.

In determining which actions to take to reduce risks, the individual consults previous training and experience, conventional wisdom and the actions of others, particularly loved ones (Perry & Greene, 1982). Furthermore, previous experience may prompt individuals to choose nonoptimal risk reductions. For example, employees are more likely to evacuate through the same door that they always use for normal operations rather than a less commonly used, yet closer exit.

Social Behavior in Disasters & Emergencies

Three models in particular have gained prominence in the behavioral sciences to explain human behavior in disasters and emergency scenarios. These include the Emergent Norm Theory (Perry & Greene, 1982); Social Attachment Model (Mawson, 2005); and Self-Categorization Theory (Drury, Cocking & Reicher, 2009). A review of each theory identifies a common element—the prosocial foundation of human behavior.

Social bonds are not broken during disasters and emergencies; instead bonds are solidified and even created. Mawson (2005) notes that separation from familiars can be as or more stressful than threat of injury. Families often delay emergency evacuation until all family members are accounted for and safe (Perry & Greene, 1982). Even amongst strangers, disaster scenarios can develop a shared sense of danger and fate, leading to solidarity amongst group members and greater number of reported selfless acts amongst strangers (Drury, Cocking & Reicher, 2009).

The fight-or-flight response has long been used to describe human reaction to threatening scenarios. When faced with a significantly threatening event, the body prepares to face the threat by activating the sympathetic nervous system, which increases heart rate and blood pressure, shunts blood away from unnecessary areas and into the muscles, inhibits digestion and promotes faster, deeper respirations (Wickens, 2005). This response permits an increased energy output, allowing individuals to face the impending threat. Note that this scenario discourages unnecessary actions; humans naturally respond to disaster and emergency scenarios by seeking social norms and attachments. As Mawson (2005) notes, conventional thinking regarding panic behaviors fails to take into account that human beings are fundamentally social beings.

Numerous empirical studies of human responses in emergency and disaster scenarios present a consistent picture of the prosocial behavior of individuals. Frequent examples of people helping others, starting with family and friends and extending to the greater community are seen. Volunteers and donations pour into affected areas, whether they are asked for or not. Not everyone acts in this way, but, as Clarke (2002, p. 24) notes, "People die the same way they live, with friends, loved ones and colleagues—in communities. When danger arises,

the rule—as in normal situations—is for people to help those next to them before they help themselves.”

A careful review of the examples (the sinking of the *Lusitania* being the exception) hints at this behavior. In the most major disasters, the first search-and-rescue efforts are performed by disaster survivors within the community (Perry & Lindell, 2003a). After a 1979 tornado in Wichita Falls, TX, only 13% of the more than 5,000 victims indicated that they had been rescued by someone they recognized as being associated with an emergency organization. Fifty-nine percent of all uninjured victims interviewed rendered aid to someone shortly after the tornado passed. In 1985, following an earthquake in Mexico City, Mexico, more than 2.8 million adults volunteered in the response. Injured people were carried to hospitals in personal vehicles or whatever means were available (Auf der Heide, 2004).

In fact, rather than emergency response agencies reporting shortages of resources in disasters, spontaneous outpourings of volunteerism and charity frequently are witnessed (although organizational and inter- and intra-agency issues may hinder the resources from getting to needed areas). This outpouring of resources and volunteers typically leads to an overloading of already stretched response agencies' and organizations' abilities (Auf der Heide, 2004). Emergency managers must manage the resources to handle the response, and also must handle the physical and personnel resources that have been donated and volunteered beyond what is needed.

Furthermore, as noted, rational and prosocial behavior individuals wishing to volunteer will act in the way that is perceived to be best given the information and resources they have at the moment. This often leads to inefficient response efforts because volunteers may work in areas that they believe they can do the most good, even if they are needed elsewhere. This is often fueled by media reports of great needs in areas affected by a disaster. Such reports often are based on the perception of the reporters in the news outlets or other sources of unofficial information (Auf der Heide, 2004).

Behavior-Based Emergency Action Planning

The fundamental problem with the panic myth is that it points to individuals as the problem that emergency managers must overcome (Quarantelli, 2008). However, research indicates that individuals adapt well during disaster or emergency scenarios and often are only limited by research and the organizations put in place to help them. Safety professionals and emergency planners must, therefore, design organization emergency preparedness plans with this understanding.

In the U.S. and other parts of the world, regulations emphasize written programs, such as OSHA's Emergency Action Plan. However, as Perry and Lindell (2003) note, a written program is only one part of the emergency preparedness planning process. Emergency planning must be dynamic, involving processes for the development of written

plans and programs as well as training, regular drills and continual improvement.

As part of the emergency planning process, expected human behaviors in disaster and emergency scenarios must be considered. This must include identifying desired employee responses to various expected disaster and emergency scenarios. For example, what should employees do when a fire occurs? Should they evacuate the area? Should a fire extinguisher be used and, if so, which employees should use the fire extinguishers and on what types of fires? Such questions should be asked for all reasonably expected disasters and emergencies.

Once desired behaviors are identified, emergency preparedness programs should be implemented to increase the likelihood that employees will perform the desired behaviors rather than inappropriate behaviors. Three areas in particular should be analyzed to ensure program success—emergency systems, training programs and leadership.

Emergency Systems

Depending on the desired behaviors, emergency systems should be identified and implemented to ensure increased likelihood of successful behavioral performance. At a minimum, emergency planners should review emergency communication systems.

Communications must be clear, specific about employee risks and include detailed procedures employees should follow to protect themselves. In the past, fear of mass panic has caused emergency planners to hold back accurate risk assessments from the public (Pennings & Grossman, 2008). However, the uncertainty created by the lack of information only increases the probability that employees will engage in inappropriate responses to warning messages. Research indicates that individuals do engage in rational thought in disaster and emergency scenarios (Perry & Lindell, 2003b). This implies that if given the right information employees should conduct accurate risk identification and risk assessment and, therefore, engage in appropriate risk reduction.

In many organizations, emergency communications are conducted, at least in part, by alarm systems, such as a fire alarm. In most organizations, the desired behavior when an alarm is signaled is to evacuate. The hope is that employees will associate an alarm (risk identification and assessment) with the need for immediate evacuation (risk reduction). However, organizations frequently undermine this desired behavior each time they conduct poorly thought-out, regulatory-required tests of the alarm systems. These alarms are tested frequently during normal work hours, so employees hear the alarm, but are instructed to not respond with the normally desired behavior (evacuation). When the alarm is activated during an emergency, its credibility is questioned because commonly it is not associated with the necessary response.

Instead, organizations should test alarm systems during off hours, such as evenings and weekends. Another option is to coincide alarm tests with regular drills, so that employees only hear the alarm



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when it is associated with the desired behavior. For all emergency warning systems, consider implementing confirmatory, redundant warning systems. The presence of multiple warnings increases the likelihood that evacuations will occur when necessary (Perry & Lindell, 2003b).

Although rare, panic can be devastating when manifested. Therefore, safety professionals and emergency managers must decrease the probability of panic reactions by understanding the conditions in which panic occurs. Whenever possible, workspaces must be designed not only with adequate emergency exits, but also with exits clearly identified and employees trained on their location and the importance of keeping them unobstructed. Remember, the perception of inadequate exiting is all that is needed. If exits are clearly marked and obstruction-free, employees will be less likely to perceive an inability to exit and, therefore, less likely to panic.

Based on desired behaviors, safety professionals and emergency planners should identify ways to ensure the safety of employees when behaviors are performed. For example, if employees are trained in the placement of fire extinguishers, fire extinguishers should be placed in appropriate locations which ensure that employees do not make a mistake when they choose to fight a fire, such as near exits, and away from areas where employees can become trapped, such as copier rooms.

Fire extinguishers are frequently located in copier rooms and office kitchens, which can be poor practice because these areas are often near the center of buildings. Employees making copies or microwaving their lunch will frequently see the fire extinguisher, making it more mentally available in an emergency. During a fire, the fire extinguisher that is most readily available will be the one that employees are most likely to rush to, causing the employee to travel to the middle of the building, rather than in the direction they should be going—toward the exit.

Planners should consider not only increasing the probability of desired behaviors of employees in disaster and emergency scenarios, but also decreasing the probability of unwanted behaviors. For example, if safety professionals do not want employees to be trained in the use of fire extinguishers, then the number of fire extinguishers in the workplace should be limited to the minimum number allowed, employees should be instructed on the proper procedures to follow in a fire event, and signage such as “not for employee use” should be placed near fire extinguishers.

Organizations also should consider utilizing programs designed to help employees ensure that family members are safe and accounted for in a disaster. Doing so will likely relieve issues related to role conflict and strain in those organizations that require employees to partake in postdisaster rescue-and-recovery efforts (Trainor & Barksy, 2010).

Even in emergencies that do not affect areas outside the organization, employees will likely seek to contact loved ones as a means to relieve stress (Mawson, 2005). Loved ones will be on employ-

ees’ minds and, therefore, should be considered in emergency preparedness planning.

Training Programs

Employees should be thoroughly trained on all disaster and emergency procedures. This training should include the location of emergency exits, evacuation routes, employee roles and responsibilities, and any relevant emergency response procedures employees are expected to perform, such as search and rescue, CPR and first aid, the use of a fire extinguisher or hazardous substance emergency response. Training should be carefully designed so that each milestone in the emergency decision-making process is covered—risk identification, risk assessment and risk reduction. For each expected disaster and emergency scenario, the identification of the situation, the relevant information about its severity and likelihood, and the procedures employees can follow to minimize negative consequences should be discussed.

Training should include regular hands-on practice drills with a postdrill analysis that identifies lessons learned. Drills should be as realistic as reasonably possible. For example, organizations that have night shifts should allow night shift crews to conduct drills during that shift so that issues specific to emergencies at night may be identified. Additionally, at least one drill should be conducted where employees switch roles with another employee. An employee who normally leads the evacuation should trade places with another employee so that all employees gain a perspective of each other’s roles. This practice increases the depth of training experience within the organization as well.

Whenever possible, outside resources should be brought in to assist in training and drills. At a minimum, this should include interfacing with local response agencies so that a realistic understanding of capabilities and expectations can be gained. This also gives response agencies familiarity with an organization, leading to more effective public response when necessary. These agencies also can critique the emergency preparedness programs to identify areas of improvement for the organization.

An organization located near other business, industrial or residential areas should consider interfacing with neighboring groups about emergency response planning, training and drills. Research indicates that survivors in the immediate area frequently conduct the first rescue operations. This means that the volunteer base following a disaster will come from the neighboring groups. Furthermore, employees from an organization may feel compelled to volunteer in rescue efforts at a neighboring facility following a disaster, potentially exposing those employees to danger. Interfacing with neighboring groups allows for a more thorough understanding of emergency preparedness capabilities and expected scenarios within an area.

Leadership

Because disaster and emergency scenarios often create new normative structures, leaders in disasters are often not those who were leaders before



Workspaces must be designed not only with adequate emergency exits, but also with exits clearly identified and employees trained on their location.

the disaster. Leaders in disasters and emergencies are often those who propose innovative solutions to problems faced by the group and those who are credible (Aguirre, 2005). Emergency action and response plans must establish clear lines of authority, but these lines of authority need not be based on the lines of authority in place during nonemergency situations. Those designated as leaders during an emergency must be thoroughly trained in emergency response strategy and tactics, as well as disaster psychology. Training should be scenario based, presenting potential leaders with many what-if scenarios and critiquing chosen actions.

Potential leaders must be credible to the rest of the organization. Aguirre (2005) reviews research which suggests that those in uniform or who look official are more likely to be perceived as a legitimate authority. Emergency leaders should be differentiated during disaster and emergency scenarios in some way, such as a unique high-visibility vest. Furthermore, to cement the legitimacy of the leaders, these employees should be highlighted during nonemergency times in training and through signage, such as an easily visible sign on an office door, or a flag hung above the wall of the employee's cubicle.

Additionally, trained managers must be on site whenever the organization is in operation, given that emergencies rarely happen when it is convenient. Furthermore, plans and programs should designate backup managers if primary managers are unavailable. All employees within the organization should be notified and trained on the organization's command structure to establish clear lines of authority.

Conclusion

Human responses during disasters are rarely consistent with responses expected by the public and media. Unfortunately, these perceptions have crept into emergency action and response planning by safety professionals and emergency response planners. A careful review of social science and disaster research yields a different picture. Rather than responding in irrational and/or self-interested ways, people typically respond in rational and prosocial ways. Panic behaviors do occur, but research suggests only when the perception of immediate threats, closing exit routes and a lack of help or resources are present.

More typical human behaviors include the process of risk identification, assessment and reduction. Furthermore, almost all human behavior, even in disaster and emergency scenarios, is based on social norms and the need for attachments. Safety professionals and emergency planners must design emergency programs to account for normal human behaviors, which, although better than panic behaviors, present unique challenges. Consideration should be given to emergency systems, training programs and choosing appropriate emergency leaders. Emergency response and action plans that account for natural human responses to disasters are likely to be effective in minimizing risks to employees. **PS**

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