Vigil in support of the victims of the June 12, 2016 Orlando nightclub shooting.

Run, Hide, Fight: Why the current version doesn't work for live events, and how to do better

BY **STEVEN A. ADELMAN**

UNTIL RECENTLY, the people taught to respond to an active shooter were mostly office workers, who were told to "Run, Hide, Fight," in that order. Some schools received similar training, minus the "run" part.

During the last two years, however, I have been a presenter at several conferences where active shooter training was offered for stadium and arena managers and hotel and tourism professionals. Since the terrorist attacks at the Bataclan Theatre in Paris last November, the trend to teach all manner of venue and event professionals to respond to an active shooter has been gaining momentum.[1] The June 12, 2016 massacre at the Pulse nightclub in Orlando, the deadliest shooting incident in U.S. history, almost certainly will increase the cry to teach everyone to run, hide, fight.

I don't think the proliferation of active shooter training is doing most of us any favors. This veneer of training invites us to enjoy a false sense of security, a mistaken belief that we are ready to respond should an active shooter open fire at our venue or event.

We are not. This article explains why the current one-size-fits-all approach does not work for live events, and suggests a more tailored approach that better fits the way people actually respond in emergencies.

Things that have never happened before happen all the time

The U.S. Department of Justice defines an active shooter as "an individual actively engaged in killing or attempting to kill people in a confined and populated area" by use of a firearm.[2] From 2000 through 2013, the FBI catalogued 160 active shooter incidents in the United States, with the trend pointing towards dramatically more violence.[3]

The FBI found that 70% of active shooter incidents ended in five minutes or less, most before law enforcement arrived.[4] Therefore, the thinking goes, people who work and play in public should be trained to do something for themselves rather than waiting for help.

In October 2008, the U.S. Department of Homeland Security published a workplace safety manual, "Active Shooter: How to Respond,"[5] and FEMA later created IS-907 training, "Active Shooter: What You Can Do."[6] In 2012, the City of Houston released a six-minute video portraying DHS's guidance, called "Run, Hide, Fight"[7] which has been watched nearly five million times.[8] An online search under the term "active shooter training" now reveals a cottage industry of consultants selling their own versions of this program.

The gist of "Run, Hide, Fight" is simple:

1. If a safe path is available, **run** to a safe place (and help others out, too).

2. If you cannot leave safely or you're not sure it's safe, find a place to **hide**.

3. If there is no other option, **fight** the attacker with any weapons available.

However, there is a significant problem with teaching people to quickly decide whether and how to run or hide or fight when bullets begin to fly—both history and psychology show that most humans make decisions very poorly in actual emergencies.

Before a mob of consultants and trainers starts lighting torches, here is my thesis. I am not suggesting that Run, Hide, Fight is wrong. Rather, based on the anecdotal and scientific evidence that most people cannot not engage in that sort of supple mental gymnastics during a crisis, I am suggesting that, particularly for live event and venue professionals, active shooter response training focus on the people who, due to their life experience or brain chemistry, are better than the rest of us at recognizing and responding to emergency situations. Put another way, rather than giving everyone training that few are able to use, train the few who can lead how to move the followers to safety.

A body at rest stays at rest

When emergencies occur in public places, one might hope and expect people to immediately recognize the danger and do something constructive about it. The whole idea underpinning "Run, Hide, Fight" is that people will (a) immediately recognize the

sound as a hazard requiring them to respond, (b) decide where it is coming from, (c) make the more important determination where it is going next, (d) then choose from three distinctly different options what to do about it, and then (e) spring into action.

Two problems immediately come to mind. Generally, only an unhappy few know what gunfire sounds like where they work, much less where they attend entertainment events. This makes parts (a) through (c) of active shooter recognition and response a challenge. More specifically, most live event venues are loud, and many are also dark. In a typical scenario, a D.J. playing reggae music on the patio outside the Pulse nightclub while Latin music played inside told reporters, "I heard shots, so I lower the volume of the music to hear better because I wasn't sure of what I just heard. I thought it was firecrackers, then I realized that someone is shooting at people in the club."[9]

Deeper analysis of tragedies in venues over the last 100 years repeatedly show people losing their ability to make seemingly obvious choices, or simply becoming paralyzed by indecision or inertia.

I have a growing bookshelf with titles like *The Unthinkable*,[10] *The Survivors Club*,[11] and *Deep Survival*,[12] in which authors recount real-life disasters and consider why some people survive while others do not. To support my critique of widespread active shooter training, I offer a just few anecdotes. These stories may be generally familiar to readers, but the specifics that relate to the assumptions embedded in active shooter response training likely are not.

1911, Triangle Shirtwaist fire, New York, NY. The broad outlines of the tragic death of 147 factory workers are well known: locked exit doors which opened against the direction of egress, no notification of workers on the ninth floor, a collapsed fire escape leading to workers jumping to their deaths. Our focus is on the less-discussed facts related to delayed communications when people still could have been saved.

Active Shooter Incidents With The Highest Casualty Counts

102	Pulse nightclub, Orlando, FL (49 killed, 53 wounded), 6/12/16
70	Cinemark Century 16 Theater, Aurora, CO (12 killed, 58 wounded), 7/20/12
49	Virginia Tech, Blacksburg, VA (32 killed, 17 wounded), 4/16/07
45	Ft. Hood Soldier Readiness Processing Center, Ft. Hood, TX (13 killed, 32 wounded), 11/5/09
29	Sandy Hook Elementary School, Newtown, CT (27 killed, 2 wounded), 12/4/12

Fire fighters struggle to extinguish the burning Asch Building, the location of the Triangle Shirtwaist factory. When the telephone switchboard operator received a call about the fire, she dropped the phone and ran, rather than alerting the people on the floor above the fire. The phone was the only reliable way to warn them.

The fire began on the eighth floor of the Asch Building. A bookkeeper on that floor, alerted by screams and workers rushing around, tried to alert the executives on the tenth floor. Dinah Lipschitz had a telephone on her desk, which she knew how to use, which was fully operational, and which would have immediately connected her upstairs. Instead, she tried her new telautograph. This device linked two pens standing over two pads of paper in different places; when the operator wrote with one pen, electrical impulses were supposed to simultaneously move the pen in the other room. However, the machine required the operator to rig the wires one way to send a message and another way to receive one. Not surprisingly, no one at Triangle was good at using the telautograph.

When Ms. Lipschitz wrote the single word, "FIRE!" on her pad, the pen on the device at the switchboard two floors above didn't move. For two minutes, surrounded by a growing fire and panicked workers crowding towards jammed exits, Dinah Lipschitz waited for her pen to move in response. At last, she gave up and grabbed her phone and called the factory's switchboard operator.

When the lady sitting at the switchboard, Mary Alter, heard something through the receiver about a fire, she dropped the phone and ran. Apparently she forgot that communications could reach the ninth floor only through her switchboard, which is why workers on the ninth floor learned of the fire only when flames began to lick through their windows. By then it was too late for many of them.[13]

1944, Ringling Brothers, Barnum & Bailey Circus tent fire, Hartford, CT. On a July afternoon, a circus tent caught fire, killing 169 of the approximately 8,000 people in attendance. Accounts uniformly describe the fire as spreading quickly. The people closest when it began apparently did nothing, robbing others of critical evacuation time.

The fire began either on a side wall of the tent or the roof (survivors gave conflicting accounts). A girl in the bleachers felt heat behind her, turned around, and asked her mother if the tent was supposed to be on fire. They did not move. An usher in front of the bleachers saw the flames and pointed in that direction, but otherwise did nothing. Detective Paul Beckwith, who was standing near the bleachers looking for a parole violator, explained later, "I remained silent hoping that no one else would notice the flame before it was extinguished, as I had no doubt that it would at that time. I had every confidence it would be put out." Finally, a man returning to the bleachers with a Coke he'd just purchased pointed with his bottle and yelled, "Fire!"

Witnesses agreed that while a few people turned around, most paid no attention, remaining focused on the Wallendas in the midst of their trapeze act.[14]

1977, Beverly Hills Supper Club fire, Southgate, KY. In this infamous case, 164

people died in a large event complex in a Cincinnati suburb. The fire began behind a wall in an unoccupied room while 2,400 to 2,800 people were in the club. Most of the deceased were found in the Cabaret Room, where more than 1,200 people were seated. They were the last ones to learn of the fire. As in most of the worst crowd disasters, there were many structural problems that contributed to the carnage, including gross overcapacity, no smoke detectors, fire alarms, or sprinklers, and too few exits. Again, however, this incident demonstrates an astonishing lack of response to seemingly obvious indications of the need to flee immediately.

Eighteen year-old Walter Bailey was assigned to work as a party busboy in the Cabaret Room that night, prepping butter bowls and dressing salads. Around 8:30 p.m., he went to help out in another room. While he was walking down the hall, a waitress asked if he knew where the club's owners were, explaining in a whisper, "There's a fire in the Zebra Room." Curious, he went to see for himself.

In the Zebra Room, Bailey discovered smoke puffing out around the doors, which he wisely did not open. Instead, he walked to the bar next to the Zebra Room and shouted, "Everyone out! There's a fire," which caused those guests to get up and move.

Walter Bailey then walked back to the Cabaret Room, on the other side of the building. He told a supervisor, "We have to clear the room," but the supervisor did nothing. Bailey turned to a group of 70 people waiting to enter the Cabaret Room, said "Everyone, follow me," and led them outside to the safety of a garden.

Back inside, nothing had changed. The comedians were still telling jokes on stage. Once more, Bailey did something one would not expect an eighteen-year-old busboy to do. He walked through the VIP section, climbed onto the stage, and took the mic.

I want everyone to look to my right. There's an exit in the right corner of the room. And look to my left. There's

an exit on the left. And now look to the back. There's an exit in the back. I want everyone to leave the room calmly. There's a fire at the front of the building.

Finally, guests in the Cabaret Room started to move, but for many of them it was already too late.[15]

2003, The Station nightclub fire, West Warwick, RI. After Great White's unlicensed pyrotechnics lit the old roadhouse on

fire, likely the last picture taken inside the burning building was of a man named Jeff Rader. In the picture, although smoke has descended from the burning ceiling almost down to his head, at which point the air will be unbreathable for him, his expression is calm. In one hand he holds a lit cigarette; in the other a drink. His jacket is draped over his left arm. Beyond the frame of the picture, was the stage door, which was open
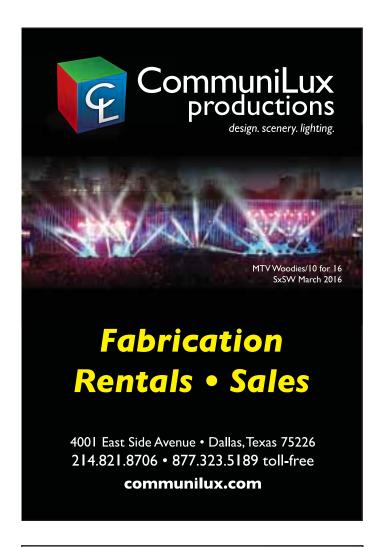
to the outside. Rader knew that door was there because he had worked as a roadie loading equipment through it. According to the Rhode Island Attorney General's report on the fire, 24 people exited through this door, all without injury. Based on the location of his remains, Jeff Rader never moved.[16]

2005 National Institute of Standards and Technology (NIST) study of 9/11 survivors, New York, NY. Following the September 11, 2001 attacks on the World Trade towers, the U.S. Commerce Department authorized NIST to interview survivors. Among the many interesting findings are accounts of what people did immediately upon learning their building had been struck. The results of these nearly 900 interviews dramatically underscore the anecdotal evidence described above, which is that most people mill around doing not much of anything for a significant period of time when the only rational response would be to *immediately* do *something*.

On average, World Trade Center survivors waited six minutes before heading down stairs, a figure that likely was higher for those who died, thereby denying their data for the survey. What vital tasks were these people doing instead of leaving? Many people made phone calls. Forty percent of respondents gathered items before leaving their desks. About 1,000 people took time to shut down their computers.

A lady named Elia Zedeno who worked on the 73rd floor of Tower 1 was typical. She sat at her desk until a colleague screamed at her, "Get out of the building." Before doing so, however, she picked up her purse, then she walked in circles around her cubicle a few times, then she grabbed a mystery novel she had been reading. She said later, "I was looking for something to take with me. It was like I was in a trance." One might think Ms. Zedeno would have been particularly quick to recognize a mortal danger and take flight—she had already lived through the 1993 World Trade Center bombing.[17]

Confirmation bias, or why most of us are sheep

Although active shooter training presumes that nearly everyone is capable of thinking clearly and taking immediate action to run or hide or fight,[18] psychologists who study the way people respond to unexpected and frightening stimuli have said otherwise for years.

The field is called "survival psychology," and its leading thinker is an Englishman named John Leach. After examining countless disasters and categorizing the ways in which people respond to life-threatening situations, Dr. Leach identified a phenomenon variously referred to as the "incredulity response," "normalcy bias," or "confirmation bias." This is the response everyone has to one degree or another that causes us not to believe what we are seeing because it doesn't fit our life experience up to that moment. We have trouble recognizing emergencies because our brains tell us everything is

okay, just as it always has been.[19]

In her study of people's "disaster personalities," Amanda Ripley discussed the psychological tendency to disbelieve clear evidence of emergency situations.

The human brain works by identifying patterns. It uses information from the past to understand what is happening in the present and to anticipate the future. This strategy works elegantly in most situations. But we inevitably see patterns where they don't exist. In other words, we are slow to recognize exceptions.[20]

Dr. Leach explains that our brains process information in our working memory, which has "two important limitations: (1) it can hold only so much information at any given time, and (2) it can process information at a given maximum rate and no faster."[21] Run, Hide, Fight is just three words, but our brains actually go through five distinct steps when faced with new information: perception → comprehension → decision → implementation → movement.[22] Non-optimal circumstances, such as danger, may further slow information processing, which further explains some people's slow or absent response during a disaster.

The people who work through these five cognitive processes fastest have had enough experience to perceive a familiar situation, then select from among a menu of pre-learned responses. In other words, quick and decisive responders convert a series of complex operations into one simple one, which overcomes the storage capacity limitations in our brain's working memory.

Dr. Leach came up with what has come to be known as the "10-80-10" theory.[23] Around 10% of people will handle a crisis in a relatively calm and rational manner, like Walter Bailey at the Beverly Hills Supper Club. The vast majority will "quite simply be stunned and bewildered"[24] like Dinah Lipschitz reaching for the unwieldy telautograph rather than the phone, or Detective Beckwith illogically hoping no one would notice the burning tent canvas, or Jeff Rader or Elia Zedeno not doing much of anything despite the obvious danger. The remaining 10% does do something, but it's the wrong thing, like Mary Alter at the Triangle Shirtwaist switchboard, who dropped the phone and ran, leaving no way to communicate with her co-workers one floor below.

If the 10-80-10 rule feels familiar, it's because it's a survival psychology term for the usual bell shaped curve that characterizes much of life.[25] It is also part of the training some event professionals have already received. The International Association of Venue Managers, for example, teaches the 10-80-10 theory to the people who operate stadiums, arenas, convention centers, and other large entertainment venues through its online crowd manager training course.[26]

Contributing to most people's paralysis in an emergency is that we are generally lousy practitioners of situational awareness. Simple videos of two teams passing basketballs,[27] or the "McGurk Effect"[28] show how difficult it is to see what is right in front of us, much less to say something intelligent about it in an emergency. Two times this year alone, I have stood in front of hotel conference rooms to speak

about safety in live event venues only to have my slides projected onto a screen that blocked the emergency exit. Despite the subject of what we were all there to discuss, no one protested until the person with the mic made an issue of the obvious safety violation. "See something, say something?" No, not usually.

So if most people's first reaction in an emergency is nothing very useful, it seems particularly important to identify the characteristics of the few who suffer relatively less confirmation bias. Who are the 10%, these fast processors who more clearly see something and, with the right training, could say something to help the rest of us?

Luck favors the prepared mind

The survival psychologists explain that emergency responses can be improved through training, practice, and experience. Applying this to active shooter response, this is a two-step process.

First, it is necessary to identify the people in any group who have the life experience and relatively low confirmation bias to make effective responders in an active shooter situation. These are characteristics that cannot be taught to every touring professional or member of venue or event staff, so they must be identified in the people around us.[29] Second, let's teach them to lead the people who need to be led. Here are some of the key traits discussed in the disaster psychology literature.

Experience. Practice may not make perfect, but repeated, realistic training definitely helps. In the military, law enforcement, self-defense training courses, and in schools, human brains are trained to respond nearly automatically to certain reasonably foreseeable emergencies, whether that is a bad guy with a weapon or a fire in a classroom. Obviously, the more prepared one is, the more control they will feel, and the less fear and resulting inertia they will experience.[30]

In the context of active shooters at live event venues, the experience of knowing what gunfire actually sounds like seems to be particularly valuable. The shooting in Orlando reinforced that it is difficult to distinguish gunshots from loud percussion or other normal nightclub sounds. Recall the D.J. in Orlando who thought the gunshots were firecrackers.[31]

Confidence. People who think clearly in emergencies tend to be confident they can influence events and believe there is purpose even during moments of turmoil. They may come across as arrogant, but studies show they tend to do well in disasters.[32] This is essential because the common instinct is to wait for someone else to come to the rescue. Again, Orlando is typical. One man said that he ran for the door, but on his way out he saw a bartender and other patrons hiding in a room "waiting for a miracle."[33]

Open-Mindedness. In his book, *The Survivor Personality*, psychologist Al Siebert explains that people who do best in emergencies suffer less confirmation bias than the rest of us. These are the rare people who really are situationally aware, who do not impose pre-existing patterns on new information.[34] Regardless

Saw nothing, said nothing.

of the words they might use to describe how they relate to new situations, people with the necessary powers of observation of their surroundings live by the meditative rule, "be here now."

Flexibility. It has become a truism that "no plan survives first contact with the enemy." This is part of a larger discussion by nineteenth century Prussian military strategist Helmuth von Moltke. It is not license to dispense with planning altogether. To the contrary, the rest of the passage stresses the importance of creating a plan so there is an ultimate objective on which to focus, while not becoming a slave to details, because "the path on which he hopes to reach it can never be firmly established in advance."[35]

In my experience teaching about risk and safety at live event venues, the people who have the makeup to lead usually select themselves. They speak up. They have opinions. Other people are drawn to them. Since we have a good head start on identifying the people best able to respond and help others respond, here is my proposal. Teach one new skill to the professionals who are already most likely to succeed in an emergency—how to manage crowds.

Train the shepherds

Generally speaking, I am all for individual empowerment. I prefer not to have to rely on others for my own well-being. That's probably why I have made a career working on life safety issues. However, radical self-reliance doesn't work well for live event venues. Here's why.

In several important respects, crowds at live events are different from groups of office workers or school employees. In addition to the fact that most event venues are loud and dark, most people in attendance don't know each other and don't know the venue. Moreover, it is common for people going to a game or a show to let down their guard, to become even less situationally aware than usual. A controlled substance might further impair their ability to

perceive and respond to frightening and unexpected stimuli. Nearly every aspect of attendance at a live event conspires to deprive us of information necessary to make good safety decisions on our own.

These are the reasons the law imposes on the operators of public accommodations a duty of reasonable care for business invitees—we invited them to our house. The corollary to that is that most event patrons will naturally look to the people in charge for guidance in an emergency.

In other words, in the live event industry, it is not merely that there is one group of people divided into strata of 10-80-10; there are two—the operations professionals and the guests, who are even less prepared to respond to an emergency in that venue than the people who work there. This is why crowd management training is essential.

Fortunately, this wheel has already been invented. NFPA 101, the *Life Safety Code*, beginning at 12.7.6 and the parallel 13.7.6 for new and existing assembly occupancies respectively, sets forth criteria for what crowd managers should know and what they should be prepared to do. In 12.7.6.4 and 13.7.6.4, NFPA lists the "duties and responsibilities of crowd managers," which include the things necessary to move people from danger to safety in an emergency, addressing the hazards for that particular venue.

(1) Understanding crowd manager roles and responsibilities

(2) Understanding safety and security hazards that can endanger public assembly

(3) Understanding crowd management techniques

(4) Introduction to fire safety and fire safety equipment

(5) Understanding methods of evacuation and movement

(6) Understanding procedures for reporting emergencies

(7) Understanding crowd management emergency response procedures

(8) Understanding the paths of travel and exits, facility evacuation and emergency response procedures and, where provided, facility shelter-in-place procedures

(9) Familiarization with the venue and guest services training

(10) Other specific event-warranted training

Elsewhere, the *Life Safety Code* references the four crowd dynamics factors of Time, Space, Information, and Energy,[36] and the many issues to be considered when conducting a life safety evaluation.[37] The *Code* even includes several reasonably foreseeable scenarios requiring crowd management, including "firearms violence."[38] Best of all, unlike the ability to fight through confirmation bias or exercise situational awareness, both rare gifts, crowd management requires no special skills or life experience. It can be taught to nearly anyone whose job puts them in a position where they could lead others to safety.

Teaching people to lead is particularly important when one recognizes that roughly 90 percent of event attendees will need to be led. This is the training that fills the gap currently left by Run, Hide,

Fight programs. Given our actual human strengths and frailties, this is the combination with the greatest likelihood of saving lives in a crisis.

Conclusion

In difficult times, new ideas get short shrift, and the status quo receives an advantage unrelated to its merit. It may be difficult to acknowledge that Run, Hide, Fight has been imperfect as taught even to office workers and school employees, and that it doesn't translate well to live events. I hope to at least begin a constructive discussion about how we might do better.

If we must continue to deal with horrific shooting incidents—if we, as a society, are incapable of dealing with the structural

problems that got us to this point—then let's at least do better at responding so there are fewer casualties. Our families, our guests, and our peers are all depending on us to help keep them safe. ∎

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End notes:

1. *E.g.*, "Arts and Music Venues in North America are Now Training Staff for 'Active Shooter' Situations," http://estalink.us/w5jsl, June 9, 2016.
2. "A Study of Active Shooter Incidents in the United States Between 2000 and 2013," U.S. Department of Justice, 2014, at 5, found at http://estalink.us/o5whg.
3. *Id.*, at 6 (from 2000 through 2007, there were an average of 6.4 active shooter incidents per year in the U.S.; from 2008 through 2013, there were 16.4 incidents annually). During the time I have been writing this article, there have been fatal shootings at the Irving Plaza nightclub in New York, during Christina Grimmie's post-concert autograph session in Orlando, and at the Pulse nightclub.
4. USDOJ, at 6 (60% of all active shooter incidents had ended before police arrived).
5. "Active Shooter: How to Respond," U.S. Department of Homeland Security, 2008, found at http://estalink.us/k2lq0.
6. "IS907: Active Shooter: What You Can Do," found at http://estalink.us/c1nzh.
7. "The Tipping Point: Time to Review 'Run, Hide, Fight'," Homeland Security Today, January 15, 2013, found at http://estalink.us/jackk.
8. https://www.youtube.com/watch?v=5VcSwejU2D0.
9. "Orlando Gunman Attacks Gay Nightclub Leaving 50 Dead," *The New York Times*, June 12, 2016, http://estalink.us/mhx4q.
10. Amanda Ripley, *The Unthinkable*. Three Rivers Press, 2008.
11. Ben Sherwood, *The Survivors Club*. Grand Central Publishing, 2009.
12. Laurence Gonzales, *Deep Survival*. W.W. Norton & Company, 2003.
13. David Von Drehle, *Triangle*. Grove Press, 2003, at 119-21; Jeffrey S. Tubbs, Brian J. Meacham, *Egress Design Solutions*. John Wiley & Sons, 2007, at 58-59.
14. Steward O'Nan, *The Circus Fire*. Anchor Books, 2000, at 67-68; *Egress Design Solutions*, at 65-66.
15. *The Unthinkable*, at 126-30; Ron Elliott, *Inside the Beverly Hills Supper Club Fire*. Trade Paper Press, 2010, at 91-126; *Egress Design Solutions*, at 70-73.
16. John Barylick, *Killer Show*. University Press of New England, 2012, at 79, 111-12.
17. *Federal Building and Fire Safety Investigation of the World Trade Center Disaster: Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers (NIST NCSTAR 1)*, http://estalink.us/1rsuh; *The Unthinkable*, at 5-10.
18. To be fair, the City of Houston video does show one woman panicking until she is brought to her senses by several of her calm and quick-thinking colleagues.
19. *E.g.*, John Leach, *Survival Psychology*, Chapter 2, "Psychological Responses to a Disaster;" Leach, "Why People 'Freeze' in an Emergency: Temporal and Cognitive Constraints on Survival Responses," *Aviation, Space, and Environmental Medicine*, Vol. 75, No. 6, June, 2004; Kent Greenfield, *The Myth of Choice*. Yale University Press, 2011, at 63 ("Our brains are prone to noticing facts that confirm what we already think – 'confirmation bias' – and disregarding things that would tend to disprove our preexisting notions.")
20. *The Unthinkable*, at 9; see also aviation safety expert Daniel Johnson, who attributes the same "do nothing" response to "the novelty of the situation and the lack of leadership," quoted in *The Survivors Club*, at 62; sociologist Charles Perrow, quoted in *Deep Survival*, at 75, "We construct an expected world because we can't handle the complexity of the present one, and then process the information that fits the expected world, and find reasons to exclude the information that might contradict it. Unexpected or unlikely interactions are ignored when we make our construction."
21. Leach, "Why People 'Freeze' in an Emergency" at 540.
22. *Id.*, at 540-41.
23. *Id.*, at 540.
24. Leach, quoted in *The Survivors Club*, at 48.
25. *E.g.*, Joseph LeDoux, "'Run, Hide, Fight' Is Not How Our Brains Work," *The New York Times*, December 18, 2015, found at http://estalink.us/t2w0m. (In my lawyerly skim of the psychological literature, I learned that the temporary paralysis that afflicts the fat center of the curve is called "tonic immobility." This occurs when people feel physically trapped by a frightening situation, such as a fire, sexual assault, or active shooter.) *E.g.*, Murray P. Abrams, et al., "Human Tonic Immobility: Measurement and Correlates," *Depression and Anxiety*, 26: 550-556 (2009); Eliane Volchan, et al., "Is There Tonic Immobility in Humans? Biological Evidence from Victims of Traumatic Stress," *Biological Psychology* 88 (2011) 13-19; Thomas E. Gladwin, et al., "Ready and Waiting: Freezing as Active Action Preparation Under Threat," *Neuroscience Letters* Vol. 619 (2016) 182-88.
26. http://www.iaamtraining.com/TCM.html, Slide 98 et seq.
27. See Daniel Simons and Christopher Chabris' exercise conducted in the elevator lobby of the Harvard University psychology department: http://estalink.us/r5594; (more than half of viewers studied did not notice anything unusual). *Deep Survival*, at 80.
28. https://www.youtube.com/watch?v=G-IN8vWm3m0.
29. Aviation safety experts observe that between 35 and 40 percent of the difference in passenger evacuation times was due to "inexperience and a lack of familiarity at fleeing planes." *The Survivors Club*, at 65.
30. *E.g.*, *The Unthinkable*, at 70-75; *The Survivors Club*, at 43.
31. "Last Call at Pulse Nightclub, and Then Shots Rang Out," *The New York Times*, June 13, 2016, found at http://estalink.us/m9rfb.
32. *E.g.*, *The Unthinkable*, at 91-92.
33. See Note 31.
34. Al Siebert, *The Survivor Personality*, cited in *Deep Survival*, at 122-23.
35. "No Plan Survives Contact with the Enemy," last updated February 28, 2016, found at http://estalink.us/s7tfb. (A quip I like, variously attributed to economists John Maynard Keynes or Paul Samuelson, is "When the facts change, I change my mind. What do you do, sir?")
36. NFPA 101, *Life Safety Code*, A.13.7.6.2.
37. *Id.*, A.13.4.1.1, et seq.
38. *Id.*, A.13.4.1.3, Scenario 3.