A test of any science is its ability to predict events under specified conditions. A test for the psychology represented in this special issue of the American Psychologist is its ability to predict individual and social behavior in the aftermath of a next terror attack. This article draws on that science to make such predictions. These predictions are conditioned on both the nature of the attack and our institutional preparations for it. Some attacks will test our resilience more than others. Whatever the attack, we will reduce its impacts if our institutions take advantage of psychological science. That science can reduce the scope of attacks by limiting terrorists’ ability to organize their operations and by enhancing our ability to restrain them. It can reduce the impacts of any attacks that do occur by strengthening the institutions and civil society that must respond to them. Realizing these possibilities will require our social institutions to rely on science, rather than intuition, in dealing with these threats. It will require our profession to provide psychologists with rewards for public service, applied research, and interdisciplinary collaboration, as demanded by complex problems. Responding to these challenges could strengthen society and psychology.

Keywords: terrorism, resilience, homeland security, interdisciplinary, public service

In the 10 years since the September 11, 2001, terrorist attacks, many large-scale attacks against U.S. targets have been thwarted. Most people know about the widely publicized attempts by would-be terrorists to blow up airplanes that bookended the decade, one by a man hiding a bomb in his shoes (in 2001), another by a man hiding a bomb in his underwear (on Christmas Day in 2009). Many fewer people know about other failures, such as the planned detonation of a “dirty bomb” in 2002, the attempted attack on East Coast U.S. financial institutions in 2004, the thwarted attempt to bomb the New York City subway system by a person using chemicals purchased from beauty supply stores, the failed effort to blow up a sport utility vehicle in Times Square, and the vague plan to bomb a Portland, Oregon, Christmas tree lighting event in 2010. Fewer still know about attempts that were not highly publicized (and are perhaps still classified)—or know how to evaluate the threat posed by publicized attempts that seem amateurish or were even just the result of stings. Given the secrecy on all sides, no one really knows how to attribute responsibility for the absence of another large-scale attack across the success of our efforts, the failings of terrorists’ plans, or good fortune. Nonetheless, many in the intelligence community maintain that additional attacks against U.S. interests are inevitable (Homeland Security Advisory Council, 2007).

Although the details of the next terrorist attack on American soil cannot be predicted, psychological science can help us to predict its contours, conditional on knowledge of field conditions. Given research into intergroup dynamics, psychological science can help us to understand the reasons why some individuals choose to become terrorists and engage in self-sacrifice for a “greater” goal (Ginges, Atran, Sachdeva, & Medin, 2011, this issue). Given research into memory distortion, false confessions, and detection of deception (Loftus, 2011, this issue) and into training, recruitment, and organizational processes relevant to our intelligence services (Fischhoff & Chauvin, 2011; National Research Council, 2011), psychologists can help to anticipate our chances of discovering terrorist plans. Given research into human factors in selecting and training those who screen cargo containers or airport baggage (Nickerson, 2011, this issue), psychological science can help to assess our vulnerability.

Because of our country’s fortunately limited experience with successful large-scale attacks, our predictions must be based on general scientific knowledge about the importance of such factors as the degree of devastation, whether the perpetrator is identified as foreign or “home grown,” or how the events are spun to political gain (e.g., blaming government for not having passed laws that, it is claimed, would have prevented the attack). Here, we use that science to make general predictions of how our nation will respond to a future attack, drawing on basic research into psychological processes (e.g., Brickman et al., 1982) and field research regarding the 9/11 terrorist attacks (Neria, DiGrande, & Adams, 11, this issue) and other disasters (Norris et al., 2002). Based on that record, the news is good. The public will pull through, despite the pain. It will have an easier time if its leaders and pundits recognize this likelihood and respect its resilience.

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What We Can Expect

During the next attack, people will respond responsibly, cooperatively, even bravely, with none of the panic seen often in movies but rarely in reality (Tierney, 2003; Wesley, 2005). The major exception to that pattern arises when time, visibility, and escape routes are sharply limited, as in nightclub fires. However, even this exception has exceptions: Witness the heroic evacuation of the World Trade Center on September 11, 2001. Most injuries typically arise not from people trampling one another while trying to escape but from people exposing themselves to collapsing structures, secondary explosions, and other risks while trying to rescue others.

Shortly after the attack, the heroic mantle will shift from ordinary citizens at the site, who save most lives in most disasters, to first responders, who do what is humanly possible to rescue those who remain. Their bravery and trained emotional control will serve as a model for others. Unfortunately, a minority of these rescue and recovery workers will ultimately suffer posttraumatic stress disorder and other forms of psychopathology (Neria et al., 2011), although we still do not know enough about these mental health challenges to predict their long-term course. Fortunately, resilience should be the norm among even those exposed most directly to the horrors, and evidence-informed guidelines have been developed to meet the early psychological needs of survivors (Watson, Brymer, & Bonanno, 2011, this issue).

In the immediate aftermath of the next attack, we will see an outpouring of philanthropy (e.g., charitable donations, blood drives) and patriotic actions (e.g., flying flags) (Morgan, Wisneski, & Skitka, 2011, this issue). Many individuals will see positive consequences such as closer ties with family members and a greater appreciation of the freedoms that they enjoy (Poulin, Silver, Gil-Rivas, Holman, & McIntosh, 2009). Existing social groups and community organizations will mobilize effectively, drawing on the resources, experience, and personal relations that they have developed over time (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008). External groups may offer valuable material support but will need careful coordination with local partners lest their interventions prove socially disruptive (e.g., inflaming between-group relations, aggravating feelings of inequity; cf. Wicke & Silver, 2009).

In the following days and weeks, many people, including many who suffered no direct loss, will experience acute stress reactions—a normal response to such events (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Exposure to graphic media images will amplify the attack’s health impacts (Silver et al., 2011). Fortunately, few people will succumb to the stress. Indeed, most people will prove remarkably resilient (Bonanno, Brewin, Kaniasty, & La Greca, 2010), moving forward with their lives and drawing on the help of loved ones, neighbors, co-workers, and members of religious and other communities. Not only will they not need professional intervention, but therapeutic efforts that disrupt the natural course of recovery have the potential to do more harm than good. A major threat to successful adjustment arises from well-meaning actions that interfere with the processes that foster resilience, for example, by separating people from their social supports (e.g., by dispersing them geographically, as happened after Hurricane Katrina) or providing “therapy” that pathologizes normal responses. Although we can predict with some confidence how people will respond when given sound, poor, or no psychological assistance (Watson et al., 2011), we cannot predict what resources our social institutions will deploy. Familiarity with psychological science is needed to guide effective, efficient investments in psychological recovery—and to resist interventions that are intuitively appealing but ineffective or even harmful (cf. McNally, Bryant, & Ehlers, 2003).

Saturation media coverage will keep the attack in most people’s minds (Pidgeon, Kaspitson, & Slovic, 2003). Adults, as well as young people, will be affected. Some parents will talk to their children about ongoing fears and risks, potentially shaping their children’s responses, their sociopolitical attitudes, and their general beliefs about the safety of the world (Eisenberg & Silver, 2011, this issue). Eventually, the intensity of the attack will fade, especially for the vast majority of the population who will have suffered no direct effects (Silver et al., 2002), unless social or political changes create large indirect effects (e.g., on civil liberties, religious tolerance, or employment practices). Solidarity with those who have been hurt will produce respectful records and memorials, aiding the healing process (Fischhoff, Atran, & Fischhoff, 2007). Over time, the vast majority of people will return to their normal ways of life, affording terror a level of concern that roughly matches the casualties that people have observed and the predictions that they have heard from sources that they trust.
The speed of our recovery will depend on the success of our enemies (i.e., terrorists) and our “friends” (i.e., politicians, pundits, terror professionals) in evoking emotional responses that swamp these cognitive processes, preventing us from placing terror risks in proper perspective. Their manipulations might try to instill fear, which increases perceived risks; sadness, which increases feelings of helplessness; or anger, which increases confidence in defeating those responsible for one’s problems (Lerner, Gonzalez, Small, & Fischhoff, 2003).

All those who hope to control us through our emotions have a common cause in driving reason from public discourse. Although our “friends” might restrain themselves, our enemies will be pleased to see us making decisions emotionally. Why stop us from doing their work for them? As a result, we have an abiding national interest in managing our political discourse as soberly as possible, lest our emotions lead us to unwise policies (Huddy & Feldman, 2011, this issue). Here, too, psychological science can predict the effects of unreasoned debate on our natural resilience. It cannot predict leaders’ ability to discipline themselves.

After the attack, there will be recriminations. Evaluation of the authorities’ performance will suffer from hindsight bias, as others exaggerate how well the authorities could have predicted the attack given what they knew or should have known beforehand (Fischhoff et al., 2005). Those involved in intelligence collection and analysis will be challenged, justifiably so if they did not follow scientifically sound procedures (Brandon, 2011, this issue; Loftus, 2011, this issue) or unproductively so if organizational processes kept analysts from doing their best work (National Research Council, 2011). There will also be exaggerated claims of hindsight bias, as authorities and analysts maintain that they are being asked to predict the unpredictable (Tetlock & Mellers, 2011, this issue). By holding onto their jobs while admitting that they cannot do them, the authorities will increase the public’s apprehension—and cynicism.

Various “experts” will accuse the public of irrationality despite its orderly response during the attack and its resilience afterward. Some people will accept the allegation, diminishing their self-confidence. Others will resent being treated disrespectfully, further undermining social cohesion. They will also resent authorities who expect them to do the impossible (e.g., reach distant evacuation points despite disability; keep permanent stocks of expensive supplies; confidently leave their children in the care of unknown others at shelters). Only systematic research can ensure that the public’s capabilities and needs are understood—and then addressed (Fischhoff, 2011, this issue).

If the attack contaminates their locale (e.g., with radioactive material), most people will initially trust the authorities’ orders to evacuate and instructions on when to return—especially with unfamiliar, invisible contaminants (e.g., microorganisms, carcinogens). That trust will fade if the authorities appear incompetent, dishonest, or more interested in their own well-being than that of the public. Once lost, trust is hard to restore. Witness the lasting bitterness and social alienation engendered by the perceived mistreatment of World Trade Center cleanup workers, Katrina evacuees, and postal employees exposed to anthrax (Thomas, 2003).

Here, too, psychological science can predict how people will respond to different strategies, but not which strategies authorities will adopt. For example, Great Britain and Israel have long had policies of proactively sharing potentially useful information—unless that sharing compromises national security. That strategy addresses most individuals’ deeply felt need to know the truth so that they can make the best possible choices. Awareness of that science might encourage the authorities to treat the public as trusted partners. Should they choose that strategy, the authorities will need communication strategies that identify and then authoritatively and comprehensively communicate the information most needed by their audience. The content of their communications will need to be reviewed by subject matter experts. Their success at conveying that content will require empirical evaluation. Psychological science predicts that people will generally make good use of scientifically sound messages regarding clear threats. It cannot predict whether the authorities will fulfill their duty to inform (Fischhoff, 2011). One concern is that the authorities will place unwarranted faith in training officials in communication skills or in finding spokespeople who seem to have them. People will listen to uncharismatic speakers who provide information vital to their welfare. Indeed, a test of political leadership is telling the truth even when the news is bad. People will not shoot messengers who help them to save their lives.
The Challenges for Society and Psychology

This special issue of the American Psychologist is testimony to how much we have learned in the decade since the September 11, 2001, attacks. But we could (and should) have learned more. Both the potential consumers and the potential producers of psychological science have limited its engagement. From the consumers’ side, agencies entrusted with protecting the public have provided little support (financial and otherwise) for research, either in the immediate aftermath of terrorist attacks or over the long term. They show little appreciation of the value of studying individuals and communities before and after an attack so that we can better understand the predictors of vulnerability and the factors that confer resilience. Research begun after an incident cannot fully reconstruct who people were before a life-changing event. Short-term research cannot fully capture processes that play out over time. Research focused solely on individuals or solely on communities cannot capture their critical interdependence. Lack of support for comprehensive research appears to reflect many mission-oriented agencies’ lack of psychological expertise (so that they do not know what evidence they are missing) and many research-oriented agencies’ lack of a broader mission (so that they cannot collect comprehensive evidence). Nonetheless, without acquiring a full understanding of the predictors of individual and community resilience, we are failing the public and running the risk of ineffective, and even harmful, interventions.

In other cases, research may not be supported because it is not wanted. Communication serves a political function as well as an informational one. Those who want to control the message may have no interest in publicly available evidence about how they are doing. Claims about terrorists’ motives have political weight, which research could undermine. It takes leadership to insist on evaluating politically loaded claims and speculations with evidence.

From the research producers’ side, psychology has begun to study these matters of life, death, and social survival. However, many of the researchers involved have talked largely to one another. Their results are published in peer-reviewed professional outlets and presented at psychological meetings. Their collaborations with other disciplines are limited, except where required (e.g., human factors). Their students are directed toward projects that will get them “regular jobs.” Moreover, many academic researchers are ill-equipped to compete in the contracting world where terror-related resources are dispersed.

As can be seen throughout this special issue, those psychologists who have gone beyond the profession’s confines have often found themselves mired in settings where psychological research was initially unknown and even unwelcome. However, they have also had unique opportunities to work with anthropologists, sociologists, epidemiologists, political scientists, engineers, physicians, risk analysts, policymakers, and others on uniquely rewarding problems. Partly because of the personal relations created by these sustained collaborations, and partly because these organizations have increasingly hired psychologists willing to move outside the profession’s comfort zone, psychology is gradually finding a home in terror-related arenas. Psychologists have served as formal and informal advisors to U.S. federal agencies, including the Department of Homeland Security, the Office of the Director of National Intelligence, the National Security Council, the White House Office of Science and Technology Policy, the Department of Defense, and the Environmental Protection Agency, not to mention private, nonprofit, community, and nonfederal government organizations. Psychologists are more often sought by the media to offer science, rather than the intimations or anecdotes (or posturing) that constitute so much reporting. Some have adapted their research programs to accommodate the complexities of these real-world problems, allowing them to offer results and advice that are less readily dismissed as simplistic. The profession itself is coming to recognize the value of this public service, its importance in maintaining support for psychology, and the scientific value of the research that it prompts. It has been slower to reward those who take the career paths, inside and outside academia, that lead to performing research relevant to public policy and seeing to its implementation. Economics has long supported sustained immersion in policy issues and circles. Psychology’s influence will lag until it does the same.

Success will require a combination of painstaking “bottom-up” work within policy-related organizations, slowly shaping their understanding of the vital role for psychological science, and “top-down” attempts to “speak truth to power,” advising policymakers about the need to create those roles. The authors’ personal experiences in the latter role, supporting those in the former, lead us to be guardedly optimistic about the future. The ranks of psychologists in mission-oriented agencies are gradually growing and, with them, the chances of funding quality research and applying its results. Psychology is increasingly cited in national strategy reports (e.g., Homeland Security Advisory Council, 2011; National Research Council, 2011) that explicitly acknowledge the critical need for research (see Table 1 for excerpts from the recommendations of the U.S. Department of Homeland Security’s Community Resilience Task Force; Homeland Security Advisory Council, 2011). Some psychologists have spent enough time speaking with terror professionals to develop personal relationships, learn their language, and somewhat desensitize them to our exotic (for them) science. Given how far most of us were from these issues and how minimal the research culture was in most mission-oriented agencies, we have come perhaps about as far as we could in the decade since 9/11. Our collective challenge is to build on this foundation in order to foster cultures that encourage the creation and use of the social science evidence needed to guide policy and action.

Conclusion

Most Americans will get through the next terror attack intact, getting on with their lives as well as their objective circumstances allow. They will not like it, but they will get
through it. When tested, Americans have shown as stiff an upper lip as any other nation. They will do it again, and again, if needed.

Americans’ task will be easier, though, if the authorities allow the public’s natural resilience to emerge. That means providing people with the information and resources needed to protect themselves. That means helping them to understand their situation and not manipulating their emotions in order to achieve political goals. That means treating people equally, so that our collective encounter with terrorism unites, rather than divides, the nation. That means supporting and using empirical research so that policies are evidence based to begin with and respond to new evidence. We cannot afford to accept misconceptions, anecdotes, and media-generated expectations about human behavior as we anticipate and plan for future terror attacks.

Expecting resilience is not an excuse for relaxing our vigilance. Rather, it implies dedicating ourselves to preserving and enhancing the natural resilience that can keep terror from threatening the American way of life. Scientific study of human behavior is, therefore, integral to a national strategy for preparedness, mitigation, response, and recovery.

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