
CHAPTER 4

Positive Effects of Terrorism and Posttraumatic Growth: An Individual and Community Perspective

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THE NEGATIVE IMPACT of terrorism on people and communities is well known (Danieli, Brom, & Sills, 2005). But there is also increasing evidence of positive elements and, eventually, of possible posttraumatic growth associated with the individual and community impact of terrorist acts. In this chapter, we review those elements. Social and community aspects are difficult to assess, but it is essential to study the community impact of terrorism because the goal of terrorist acts is to intimidate society as a whole. Therefore, social researchers and mental health professionals should look at the effects, both negative and positive, that terrorism may have on society in addition to its direct impact on individuals.

Can collective traumas promote positive social changes? Is contemporary European society better off after the two devastating wars in the twentieth century? Did the nuclear bombs dropped by the United States on Hiroshima and Nagasaki, or the testimonies about the European *Shoah* promote a more profound and human social view? These issues are related to the debate about whether extreme situations can be historical opportunities for positive collective actions (Lifton, 1993) and whether it makes any sense to talk about progress in the history of humanity (Nisbet, 1980).

Extreme adverse situations, such as collective violence, can also be an element of improvement of the social fabric (Martín Beristain, 2006;

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Tedeschi, 1999). Studies based on field investigations, polls, and surveys, or even studies about negative psychological reactions, allow us to address this issue. In the following pages, we present a review of the literature about the impact of terrorism on diverse positive domains of personal and group functioning: (a) development of new strengths and skills, (b) altruism, (c) sharing emotions, (d) changes in cognitive schemas, and (e) positive emotions.

THE IDIOSYNCRASY OF TERRORIST VIOLENCE

According to the World Health Organization (WHO), terrorism can be defined as collective violence that is inflicted by "larger groups such as states, organized political groups, militia groups and terrorist organizations" (WHO, 2002, p. 31). The type of violence inflicted is specified in the United Nations definition of terrorism:

Any act intended to cause death or serious bodily injury to a civilian, or to any other person not taking an active part in the hostilities in a situation of armed conflict, when the purpose of such acts, by their very nature or context, is to intimidate a population, or to compel a government or an international organization to do or to abstain from doing any act. (Article 2(b) of the International Convention for the Suppression of the Financing of Terrorism, United Nations, 1999)

Almost all definitions consider two large categories of terrorism: (1) State terrorism seeks the control of society and its citizens through the real or psychological use of intimidation and terror; it probably is and has been the most usual type of terror; (2) terrorism as *asymmetric warfare*, is defined as a form of conflict in which "an organized group—lacking conventional military strength and economic power—seeks to attack the weak points inherent in relatively affluent and open societies. The attacks take place with unconventional weapons and tactics and with no regard to military or political codes of conduct" (WHO, 2002, p. 241). In both kinds of terrorism, the aim of the terrorist actions is to achieve political goals by frightening and provoking panic in the civil population (Chomsky, 2004). As of the 1980s, there are data about the effects of state terrorism on the civil population, mostly based on the individual and community works of groups of psychologists and psychiatrists in countries under military governments, especially in Latin America (e.g., Agger & Buus Jensen, 1996; Lira, 1989; Martin Baró, 1990). Much less literature has been published on terrorism as a sort of irregular war (Corrado & Tompkins, 1989).

Terrorist violence may be potentially more devastating than other disasters and types of violence (Baum & Dougall, 2002; Curran, 1988; Torabi & Seo, 2004) for the following reasons:

- It involves deliberate intention of harm.
- It can target populous areas rather than specific targets.
- It often lacks a clear end point as the threats are usually permanent.
- In terrorism, nobody can be sure whether the worst is over or is yet to come.

The kind of terrorism observed in the 9/11 attacks and similar acts (the bomb explosions in Madrid, March 11, 2004, or in London, July 7, 2006) represent a specific modality of terrorist attack: a single episode, unrepeated, and coming from external enemies (in these attacks, the author was probably al-Qaeda). Terrorism can have even more devastating personal and collective effects when it is the consequence of civil conflicts or is carried out by terrorists from the one's own social group. The attacks on the United States by al-Qaeda resulted in an upsurge of patriotism, a greater feeling of social cohesion, and stronger faith in any decision that the government might take, whereas in Sri Lanka (Somasundaram, 2004), Northern Ireland (Campbell, Cairns, & Mallett, 2004), or the Basque Country in Spain (Tejerina, 2000), internal terrorist violence, carried out by members of the same community or country, has probably had negative effects on the population by creating a climate of collective suspicion, mistrust, and destruction of the moral system of the country.

Because "the purpose of most terrorists is to change the behavior of others by frightening or terrifying them" (Fullerton, Ursano, Norwood, & Holloway, 2003, p. 2), studies of the effects of terrorism in the general population, which is typically the ultimate target of terrorist activity, is particularly relevant. Most of these studies have been carried out with direct victims or with persons who were close to the victims, rather than in the general population (Danieli et al., 2005; Norris et al., 2002), and generally were done months or years after the events (North & Pfefferbaum, 2002). The 9/11 attacks on American soil led to an important change in this tendency. First, researchers responded rapidly to assess the psychological impact of the attacks. The earlier studies were conducted 2 to 3 days after the massacre (Schuster et al., 2001) and 1 to 2 months later (Galea et al., 2002; Schlenger et al., 2002; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Second, the populations under scrutiny were not only those directly affected who lived in the New York City metropolitan area or in Washington, DC (Galea et al., 2002; Schlenger et al., 2002) but also citizens from distant areas of the country whose exposure to the events was mainly indirect, through the intensive media coverage provided by TV, radio, and newspapers (Schlenger et al., 2002; Whalen, Henker, King, Jamner, & Levine, 2004). This double strategy (rapid studies focused on general population) has also been set up in subsequent terrorist attacks in Madrid (Miguel-Tobal et al., 2006; Vázquez, Hervás, & Pérez-Sales, 2006) and London (Rubin, Brewin,

Greenberg, Simpson, & Wessely, 2006). Therefore, a large part of the data that we present here mentions studies of 9/11 and afterward, while acknowledging a rich tradition of previous studies of previous conflicts, many of a qualitative nature (e.g., Lira, 1989; Martin-Baró, 1990; Martín Beristain, 1989).

A third relevant aspect that has characterized research after 9/11 is that it generated an extensive series of studies, not only in the well-known area of psychopathological reactions to stress (see reviews in Miller & Heldring, 2004; Vázquez, Pérez-Sales, & Matt, 2006) but also about citizens' attitudes, beliefs, values, and behaviors, some of which could be considered positive. This broader view, to some extent, overcomes the typical limitations of studies on the impact of trauma that have focused almost exclusively on the analysis of symptoms and reactions to stress in the direct victims of the traumatic events (Mehl & Pennebaker, 2003).

THE EFFECTS OF TERRORISM IN THE GENERAL POPULATION: PSYCHOPATHOLOGY, RESILIENCE, OR POSITIVE CHANGES?

Violence has harmful effects on human beings of any culture, geographic area, or social class (WHO, 2002). There is abundant literature on the effects of traumatic events and disasters on human beings (Norris et al., 2002). As expected, terrorist attacks have important psychological effects on the direct victims (e.g., DiMaggio & Galea, 2006), which, moreover, seem long-lasting (Baca, Baca-García, Pérez-Rodríguez, & Cabanas, 2005; Desivilya, Gal, & Ayalon, 1996).

But what about the general population, which is the end target of terrorist attacks? The existing data offer a very different panorama from that of direct victims. Despite the frequently alarmist discourse of the political and academic authorities (see Pérez-Sales & Vázquez, *in press*), the data show that the impact is usually much more limited than would be expected (Silver et al., 2005; Vázquez, 2005). Despite numerous initial reactions of moderate or high stress in the general population (Galea et al., 2002; Miguel-Tobal et al., 2006; Schlenger et al., 2002; Schuster et al., 2001), most of the studies have failed to reveal high rates of posttraumatic stress disorder (PTSD; see reviews in Silver et al., 2005; and Vázquez, 2005), or concomitant increases in the use of mental health services (Rosenheck & Fontana, 2003) and psychotropics (McCarter & Goldman, 2002).

In fact, the pattern of the general population is more often one of resilience than of vulnerability to terrorist acts. Resilience has been defined as "the ability . . . to maintain a relatively stable, healthy level of psychological functioning" in the face of highly adverse events (Bonanno, 2004,

pp. 20–21) or “the adult capacity to maintain healthy, symptom-free functioning” (Bonanno, Galea, Bucciarelli, & Vlahov, 2006, p. 81). Although resilience to trauma has conventionally been thought to be rare, only emerging in psychologically exceptional individuals (McFarlane & Yehuda, 1996), the data show that most people who face potentially traumatic situations react without displaying signs of major psychopathologies (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Many people display no psychological effects, not even short-lived ones. In a prospective study, Bonanno et al. (2006) showed that 65.1% of their probability sample ($N = 2,752$) of New York area residents had either no PTSD symptoms—as assessed by a checklist administered by telephone—or just one symptom during the 6 months following the 9/11 terrorist attacks. The frequency of resilience, defined as absence of PTSD, was surprisingly high even among people who were in the World Trade Center ($N = 22$) or who were physically wounded in the attack ($N = 59$)—53.5% and 32.8%, respectively, showed resilience.

To assess resilience adequately without resorting to a method based exclusively on the absence of clinically significant symptoms, people’s daily functioning and their capacity to react adaptively to adversity (Vázquez, Cervellón, Pérez-Sales, Vidales, & Gaborit, 2005), to learn from the experience (United Nations International Strategy for Disaster Reduction [UNISDR], 2005), or to implement capacity-building activities either for themselves or for the community (Pérez-Sales, Cervellón, Vázquez, Vidales, & Gaborit, 2005) must also be taken into account. Most of these aspects are usually neglected in current research on resilience in the context of trauma following terrorist attacks. Moreover, an aspect that should be adequately addressed is that probably not all initial reactions of resilience are beneficial at the long term. In a study on the psychological factors leading to resilience, Bonanno, Rennick, and Dekel (2005) studied a small sample ($N = 73$) of persons who were near the World Trade Center on September 11, 2001. Their results showed that the people who displayed higher positive biases of self-enhancement (a tendency toward overly positive or unrealistic self-serving biases) 18 months later were rated by their friends and relatives as decreasing in social adjustment and as being less honest. Thus, in some people, resilience may have long-term costs.

Many data suggest that the psychopathological symptoms of changes in the life of the general population after episodic terrorist events are fairly short-lived. Moreover, in situations of continued terrorism, a phenomenon of collective habituation is usually observed. Epidemiological studies on the impact of terrorism in the general population of Northern Ireland have generally shown a minimum effect in psychiatric symptoms, which some authors have interpreted as denial of the violence (Cairns & Wilson, 1989). In Colombia, the report of the People’s Ombudsman for the year 2000 stated

that, at that time, there was an average of one violent death every four hours and a kidnapping every six hours. Surprisingly, Colombia is systematically one of the countries with the highest rates of subjective happiness in the world. A similar phenomenon is observed in the Basque Country regarding the impact of separatist terrorism. In an extensive sociological survey carried out in 2004 with 2,506 interviews, it was reported that concern about terrorism as the main problem of the nation was lower in the Basque Country (27.9%) than in the rest of Spain (65.5%), which has been interpreted as a kind of normalization of violence and, possibly, a collective survival mechanism.

In addition to these elements of apparent resilience, research has also shown that continued terrorism may not significantly affect aspects of positive functioning. During a short telephone survey of a representative national sample of Israel ($N = 501$) comparing data on the impact of the first (2001) and the second (2004) Palestinian *intifadas*, Bleich, Gelkopf, Melamed, and Solomon (2006) found that the percentage of people who felt optimistic about the future (82%) and who felt self-efficacy about possible future terrorist attacks (76.6%) showed no significant changes. Likewise, in a sample of 747 junior high school students in three Israeli cities, Sharlin, Moin, and Yahav (2006) found that living under the threat of attacks did not seem to have a significant effect on children's emotional, cognitive, or behavioral development. Similar outcomes have been found in Palestinian victims of Israeli attacks (Punamaki, Qouta, & el-Sarraj, 1997).

Therefore, if the aim of attacks on the general population is to create a feeling of continued threat in the citizens, it is not clear whether this aim is easily achieved. The bombing of civil populations during World War II is another example of how such attacks can be integrated with relative ease into daily routines without having the expected negative impact and can even produce positive individual or collective changes (Jones, Woolven, Durodie, & Wessely, 2006).

POSITIVE EFFECTS ON INDIVIDUALS AND SOCIETIES

A majority of the people exposed to trauma report that they have experienced some kind of benefit derived not from the trauma itself but from the coping process linked to the adverse experience, which has been called benefit finding, positive life changes, stress-related growth, or posttraumatic growth (Helgeson, Reynolds, & Tomich, 2006; Linley & Joseph, 2004). Whether such positive experiences are a process, a result, or both (see Zoellner & Maercker, 2006), certain elements related to them can sometimes be observed even from the first moments of impact of a traumatic

event (Fredrickson, Tugade, Waugh, & Larkin, 2003). In this section, we focus on the positive aspects—both individual and collective—because, whether they occur as a consequence of the shattering of schemas or as a result of a laborious psychological process (Vázquez, Castilla, & Hervás, 2007), such aspects are of great importance in revealing more comprehensively the diverse consequences of terrorist attacks.

DEVELOPMENT OF STRENGTHS AND NEW ABILITIES

There are many individual and collective testimonies of human groups confronting the impact of violence that include descriptions of processes of individual and group growth. From the biblical Exodus to the resistance in the ghettos or the popular struggles in the successive decolonization wars, the diverse forms of civil resistance and community growth seem to be a constant rather than an exception in the history of humanity:

We learned to protect ourselves from terror with silence, we learned to protect ourselves with the help of prayer, but this was not enough and so, we [also] learned to protect ourselves from terror by taking decisions together. And we are still doing so. (Testimony of a victim's relative, National Committee of Displaced Persons of Peru, CONDECOREP, pp. 168–169)

Any potentially traumatic situation is a challenge to the people who suffer it. Challenges have the characteristic of making people give more than usual of themselves, and as a result, they can sometimes develop new skills or promote strengths that were to some extent hidden or underdeveloped. Research shows that terrorist attacks can lead to the development of different kinds of strength, at both a personal and a community level.

In El Salvador, almost 2 decades of state terrorism following the policy of razed earth caused the displacement and exile of more than 20,000 people, most of them women and children, to refugee camps in Honduras in the 1980s. In a two-phase retrospective study of a sample of 300 women who returned to the country in 1992 after the peace agreements, a significant increase was observed in the percentage of women who had learned new professions or skills, driven by the situation and their increased feelings of self-efficacy and their perception of personal agency (Vasquez, 2000).

In the case of the 9/11 attacks, a large-scale study over the Internet that included data from more than 4,000 people, compared the data of those who participated in the study before and after the attacks. The results showed that, following the attack, seven character strengths (gratitude, hope, kindness, leadership, love, faith, and teamwork) increased significantly, and moreover, this increase was sustained months later (Peterson & Seligman, 2003). It seems that, in addition to the collective negative impact,

many individuals displayed significant positive changes in various strengths in the interpersonal area (kindness, leadership, love, and teamwork), and in aspects concerning the philosophy of life (spirituality), two areas in which improvements are often found after traumatic events (e.g., Ai, Evans-Campbell, Santangelo, & Cascio, 2006; Vázquez et al., 2005). Likewise, increase was observed in the ability to express hope and gratitude, aspects that have important emotional implications.

Despite the novelty of the field, this is not the only study focusing on the development of strengths after a terrorist attack. In a study carried out by our group after the March 11 attacks in Madrid, positive consequences of these attacks were examined (Vázquez, Hervás, et al., 2006). For this purpose, 3 to 4 weeks after the attacks, 502 people (students and general population) were assessed, of whom 20 had been directly exposed to the attacks and 43% knew someone who had been directly affected. Data were gathered about their perception of growth and learning after the attacks, as well as positive and negative emotions experienced, among other measures. The results showed that 31% of the participants perceived positive consequences from the attacks, whereas 61% reported having experienced learning. The area of most frequent growth was feeling closer to others (80% of the total sample), followed by higher social cohesion (79% of the total sample), and, last, feeling personally prepared for similar future situations (31% of the total sample).

It appears that terrorist attacks—originally planned to weaken society—can sometimes act as catalysts to develop strengths related to human relations, to improve social and community aspects, and even philosophical or spiritual aspects.

ALTRUISM AND PHILANTHROPIC BEHAVIORS

Altruistic behaviors are usually common after disasters (Fischer, 1994). In the case of 9/11, in addition to the usual organizations that work in disasters and emergencies, new foundations were created (e.g., September 11 Fund) to channel assistance funds both at regional and state levels (Foundation Center, 2002; Renz, 2002a, 2002b). The financial aid received was unprecedented and by December 31, 2001, an estimated \$1.9 billion had been received from businesses, foundations, and institutions for the recovery efforts (Steinberg & Rooney, 2005).

Although changes in individual philanthropic behaviors are more difficult to analyze, some data point in this direction. The national survey of Schuster et al. (2001), carried out September 14–19, 2001, with 560 participants, found that 36% of the adults interviewed said they had donated blood in response to the attacks. In the survey of the National Tragedy Study (September 13–19), Smith, Rasinski, and Toce (2001) observed that

most American citizens engaged in positive civic actions as a response to the terrorist attacks: 59% of the general population performed at least some of these actions (charities, blood donation, or volunteering for organizations). Penner (2004) also verified that visits to the web site www.volunteermatch.org, which offers users a list of organizations in which people can volunteer, tripled in the days following the attacks, compared with the average of previous years, and this effect was maintained for about 5 weeks, at which time, the visits returned to the previous levels. Increase in altruistic behavior was also observed after the March 11, 2004, attacks in Madrid (Conejero, de Rivera, Páez, & Jiménez, 2004), especially in the parts of the country with a stronger feeling of belonging to a national Spanish identity.

Studies carried out with longer time intervals than the first few days after a terrorist attack offer even higher estimations of these kinds of behavior. A poll carried out October 5–8, 2001, found that 70% of Americans reported some type of charitable involvement (Independent Sector, 2001). Likewise, the Center on Philanthropy at Indiana University performed a phone survey (“America Gives”), between October and November 2001 to quantify the help provided by individuals after the 9/11 attacks. A total of 1,304 randomly selected American adults were asked about philanthropic behaviors. A total of 74.4% of the surveyed people responded to the tragedy with some kind of charitable activity (giving money; donating food, clothing, blood; or giving volunteer hours to help the victims; Steinberg & Rooney, 2005).

Again, these results show that terrorist attacks can have positive and unexpected behavioral effects that, although temporary, may be important social cohesion elements and may favor the creation of a more positive shared social script of the events.

SOCIAL SHARING OF EMOTIONS

Talking to others is a common mechanism that is usually displayed when confronting traumatic events, and it may have a positive adaptive value. “Putting emotions into words” may have important social, cognitive, and emotional implications by improving one’s own emotional regulation and receiving instrumental information to cope with the effects of the trauma (Zech, Rimé, & Nils, 2004). The disclosure of emotions probably favors social cohesion and the feeling of collective identity that allows people to verify that their own emotions and reactions are also experienced by others and to construct a collective script of the disaster (Gortner & Pennebaker, 2003; Meichenbaum, 2005).

Using a nonintrusive method—an electronic recorder device—Mehl and Pennebaker (2003) recorded conversations of a small sample of U.S. university students in naturalistic settings, starting September 10, 2001, and for

10 days following September 11. An interesting finding of the study is that, although participants did not change in their overall amount of interactions, they gradually shifted from group conversations and phone calls to in-person dyadic interactions. Moreover, whereas 2 days after the attack, 35% to 55% of the conversation topics were related to the attack, 10 days later this topic was only present in 5% of the conversations. The results of the study indicate that when facing a terrorist attack, the social expression of emotions and the way in which they are produced change (from a group format, that indicates more physical proximity and coming physically closer to others, to a dyadic format). Thus, just as the trauma-related symptoms decrease quickly a few weeks after a terrorist attack (Galea et al., 2003), the initial emotional expressions also seem to go back to normal, and have an adaptive value.

Although there may be differences in personality and cognitive style, and gender or cultural differences (see Singh-Manoux, 2001) in the use and effectiveness of social sharing, this could be one of the mechanisms that, in general, facilitate positive processing of trauma (Fredrickson et al., 2003), as long as the right conditions are present, such as having an "appropriate target" (Lepore, Ragan, & Jones, 2000). Obviously, not all social contexts in which terrorist attacks occur favor this possibility. Whereas in attacks like those of Madrid or the United States, talking with anyone and condemning the deeds was possible and probably had positive consequences, in situations of ethnical conflict or of clashes within a community or nation, the expression of emotions may be severely limited, making healthy emotional processing more difficult (e.g., Somasundaram, 2004).

Demonstrations are another interesting kind of social reaction to attacks on a group. This is a frequent phenomenon in some countries (e.g., Spain or Italy) but almost nonexistent in others (e.g., the United States or Israel after suicide attacks), and is beginning to appear in Arab countries (e.g., Lebanon, Palestine). In Spain, after some of the most significant attacks of the terrorist organization ETA or after the attacks by al-Qaeda on March 11, 2001, there were multitudinous demonstrations in which millions of people participated on the same day, and that have become symbolic milestones of the collective chronicle of active resistance to terror (Sabucedo, Rodríguez, & López, 2000). These collective demonstrations of cohesion and social attachment have probably had the instrumental value of increasing the perception of collective control over terrorist violence (Funes, 1998; Tejerina, 2000). Participating in these acts may also have other positive psychological effects. In a sample of 1,650 university students and their acquaintances or relatives, Basabe, Páez, and Rimé (2004) observed that attending demonstrations in the days following the March 11, 2004, terrorist attacks in Madrid predicted a more positive and benevolent image of oneself, of others, and of the world at 3-week and 2-month follow-ups. Therefore, active

participation in demonstrations of rejection of violence may also positively affect participants' cognitive schemas.

CHANGES IN WORLDVIEWS

The individual and collective effects of terrorism, both in behavioral and in cognitive domains, can be diverse. Torabi and Seo (2004) investigated changes in Americans' lifestyle as a consequence of 9/11, by means of a telephone survey performed between July 23 and September 8, 2002. Using random-digit dialing in a nationally representative sample of 807 U.S. adults, 29% ($N = 236$) of the respondents reported some behavioral changes in their lives, and 7% had experienced severe negative changes due to the 9/11 attacks, and such changes were still affecting their lives at the time of the interview (they had increased their precautions concerning surroundings and people, they avoided crowded areas, felt apprehension about deployment of loved ones, or were reluctant to fly). About 30% reported having experienced more positive than negative changes and, interestingly, most of these changes considered positive by the interviewees were related to the cognitive domain (becoming more appreciative of life and family or reinforcing some aspect of personal identity such as becoming more patriotic, more spiritual, or religious); see also Ai et al. (2006).

The consequences of trauma (e.g., severity and duration of symptoms) may depend on the extent to which traumatic events violate individual assumptions that usually maintain beliefs about justice or perceptions of personal invulnerability and self-efficacy. Perhaps the most well known and extended model of inner representations is that of Janoff-Bulman (1992), who integrates previous related models (e.g., Epstein, 1991). This author proposed that, from early experiences, human beings normally develop a schema of the world based on three core assumptions:

1. The world and other people are benevolent.
2. The world and our personal experience are meaningful.
3. The self is worthy.

When traumatic experiences shatter these assumptions to any degree, psychological effects seem to be more severe. In a study with a sample of survivors of different types of trauma, Goldenberg and Matheson (2005) found that more damage to these inner representations is associated with passive coping strategies (avoidance, wishful thinking, and self-blame), which, in turn, is associated with more severe symptoms of PTSD.

In the tradition of so-called posttraumatic growth, it has been proposed that this shattering of schemas is a factor that can set off other posttraumatic growth processes more easily (Calhoun & Tedeschi, 2005; Tedeschi &

Calhoun, 1995). Although changes in schemas probably often occur gradually and progressively over one's lifetime, some intense experiences, such as terrorist attacks, may shatter these beliefs almost instantaneously (Janoff-Bulman, 1992, 2005), forcing the individual to activate a process of reconstruction that occasionally may lead to an intense experience of growth. Thus, one of the basic issues that should be addressed and which is of enormous importance, is not only psychological but also political: Can terrorism shatter people's core beliefs or assumptions? And, if so, can consequences of the shock also be positive?

Because of its characteristics (intentionality, unpredictability, continuous threat, etc.), terrorism probably directly affects these core assumptions as much or more than other kinds of human-induced violence (e.g., sexual assault, rape, interpersonal violence) that are known to affect inner representations (Goldenberg & Matheson, 2005).

One of the most probable hypotheses of the negative effects of terrorism is that it can shatter a generalized positive image of human beings and of justice and order in the world. Some studies with survivors of the Holocaust have found that, despite difficulties integrating what happened in their life trajectory (Shamai & Levin-Megged, 2006), some survivors say they acquired a deeper viewpoint of the meaning of life (Prager & Solomon, 1995). But the existence of positive consequences in the view of the world and of oneself is a controversial issue. In the only review published to date about the possibility of posttraumatic growth in times of war (Rosner & Powell, 2006), the authors conclude that, in the short term, there does not seem to be any evidence of its existence. Powell, Rosner, Butollo, Tedeschi, and Calhoun (2003) used the Posttraumatic Growth Inventory in two representative samples of adult ex-refugees and displaced people who lived in former Yugoslavia before the war and were currently living in Sarajevo, Bosnia, and Herzegovina, 3.5 years after the war. The authors found that participants' mean scores were much lower than the reported means of survivors of other traumatic situations.

There are few data about the effects of terrorism on the cognitive schemas of the general population. Using the World Assumption Scale (WAS; Janoff-Bulman, 1989), two longitudinal studies in the general population in Spain between 3 and 8 weeks after the March 11 terrorist attacks in Madrid found no changes in participants' benevolent view of the world or in their faith in other people (Techio & Calderón-Prada, 2005; Ubillos, Mayordomo, & Basabé, 2005).

Also using the WAS, Solomon and Laufer (2005) studied the world assumptions of 2,999 Israeli adolescents living in various zones that differed in the degree of exposure to political violence. The study showed that more negative world assumptions were associated with having suffered trau-

matic events in general, but they had no relation to the exposure to specific terrorist incidents. The best predictors of a positive view of the world was having adequate social support and a high religious and political commitment, rather than the terrorist incidents experienced. This probably suggests a process of habituation to violence.

In the National Tragedy Study (Smith et al., 2001), a nationally representative random telephone survey was performed with 2,126 U.S. residents about the emotional impact of the 9/11 tragedy. This survey was carried out between September 13 and September 27, 2001, and also included some items and indicators from the General Social Surveys from 1972, which makes the analysis of the results of this study especially interesting. Moreover, to analyze changes over time, the authors made a second survey between January 10 and March 4, 2002, reinterviewing a substantial subsample of the participants of the first round (Rasinski, Berkold, Smith, & Albertson, 2002).

Table 4.1 displays some of the more relevant results about positive emotions experienced and variables related to change in schemas of the world and humankind. After the attacks, national pride increased in the general population of the United States, a score that is normally already among the two or three highest in the world (Smith & Kim, 2006). Moreover, pride in specific domains, such as the army and the history of the country increased even more. Thus, the elements of cohesion and national and collective identity apparently underwent a significant increase in American citizens after 9/11. In addition, according to some authors, a decline in public cynicism about the government and higher cohesion between different political parties in those moments of crisis were also observed (Chanley, 2002).

This increased national pride was accompanied by an increase in behaviors such as the use of the national flag in cars, gardens, houses, or workplaces. In fact, between 74% and 82% of Americans engaged in flag-display behaviors, according to several national surveys (see Skikta, 2006). It is not clear whether this exhibition of signs of national identity is an indicator of ostentation of strength, intimidation, or nationalist exaltation (an uncritical acceptance of national superiority and dominant status of one's nation) or, as suggested by Skikta, it is simply a manifestation of positive emotions linked to patriotism and to in-group enhancement. In any case, this kind of patriotic exaltation is not at all a universal reaction. In Spain, after the March 11 attacks, only a minor nationalist response was observed. Interestingly enough, there was also an absence of negative changes in Spanish citizens' attitude toward the Arab-Muslim population (Moya & Morales-Marente, 2005; Techio & Calderón-Prada, 2005), which suggests that the core assumption of the benevolence of humankind was not affected by the al-Qaeda terrorist attacks.

Table 4.1

Changes in National Pride, Confidence in Institutions, Misanthropy, and Worldviews after the September 11 Attacks in the United States

	National Tragedy Study				
	GSSS ^a 1996–2000 (%)	2001 ^b		2002 ^c	
		National (%)	New York (%)	National (%)	New York (%)
A. National pride (General)					
I would rather be a citizen of America than of any other country in the world. (Agree)	90.4	97.4	92.4	96.7	91.8
Generally speaking, America is a better country than most other countries. (Agree)	80.2	85.3	81.0	86.2	83.3
There are some things about America today that make me feel ashamed of America. (Disagree)	18.4	40.0	46.4	49.1	39.9
B. National pride (Domain-specific: Very proud of America for . . .)					
America's armed forces	47.1	79.5	75.7	83.7	76.2
Its history	47.1	68.3	58.1	55.7	51.3
The way democracy works	26.8	60.6	54.7	55.4	55.4
C. Confidence in institutions (Great confidence in . . .)					
The military	39.7	77.4	68.4	80.7	73.3
Congress	12.7	43.4	43.8	31.3	36.2
Major companies	28.4	31.7	31.2	20.4	19.7
D. Misanthropy (People are . . .)					
Fair	51.6	63.2	61.7	64.1	56.8
Helpful	45.7	66.9	68.7	66.9	71.9
Trustworthy	35.0	41.3	30.9	39.2	32.1
E. Worldviews					
World is filled with evil and sin.	15.0	18.1	16.7	NA	NA
There is much goodness in the world, which hints at God's goodness.	58.0	62.1	57.8	NA	NA

(continued)

Table 4.1 (Continued)

	National Tragedy Study				
	2001 ^b		2002 ^c		
	GSSS ^a 1996–2000 (%)	National (%)	New York (%)	National (%)	New York (%)
Human nature is basically good.	55.4	54.4	53.6	NA	NA
Human nature is fundamentally perverse and corrupt.	18.9	27.5	26.8	NA	NA

^a General Social Survey data, 1996–2000. Data shown in the table are from the most recent round. *General Social Surveys, 1972–2000: Cumulative Codebook*, by J. A. Davis, T. W. Smith, and P. V. Marsden, 2001, Chicago: National Organization for Research at the University of Chicago.

^b Data from *America Rebounds: A National Study of Public Responses to the September 11th Terrorist Attacks: Preliminary Findings*, by T. W. Smith, K. A. Rasinski, and M. Toce, 2001, Chicago: National Organization for Research at the University of Chicago. Retrieved June 10, 2002, from www.norc.uchicago.edu/projects/reaction/pubresp.pdf.

^c Data from *America Recovers: A Follow-Up to a National Study of Public Response to the September 11th Terrorist Attacks*, by K. A. Rasinski, J. Berkold, T. W. Smith, and B. L. Albertson, 2002, Chicago: National Organization for Research at the University of Chicago. Retrieved September 15, 2002, from www.norc.uchicago.edu/projects/reaction/pubresp2.pdf.

NA = Not available.

Taken conjointly, the data suggest that, at least with this kind of exogroup terrorism, terrorist attacks can have an unexpected rebound effect on national self-esteem and intragroup cohesion, which is probably the opposite from the effect intended by the terrorists. It is interesting to verify that, if we analyze the case of the United States, this increase in cohesion and national identity and pride in one's country did not occur at the expense of a decrease in positive core beliefs about humankind and the world. Therefore, in addition to the consistent data about resilience observed in the general population (Bonanno et al., 2006; Silver et al., 2005), beliefs about the goodness of human nature and the world in general remained unchanged and they also resisted the terrorist attacks of 9/11 in the United States. To sum up, at least in the paradigmatic case of the 9/11 terrorism, "national pride, confidence in institutions, and faith in people and human nature all have gained ground, with positive assessments generally outnumbering negative judgments" (Smith et al., 2001, p. 3).

POSITIVE EMOTIONS

Most of the research on the effects of trauma has typically focused on symptoms and adverse reactions (Yehuda, 2002) and hardly any attention

has been paid to the presence of positive emotions, which might imply that negative emotions are much more frequent or intense than positive emotions in this kind of situation.

Some interesting exceptions that have addressed directly or indirectly the analysis of positive emotions in the context of these traumatic experiences can provide a different view. In the National Tragedy Study (Smith et al., 2001), the 10-item Bradburn Affect Balance Scale (Bradburn, 1969) was used to measure five positive and five negative feelings and emotions "during the past few weeks." The items included questions about feelings of depression, loneliness, and restlessness as well as feelings of being "on the top of the world," pleased, or proud. Aggregating the data of the study, 69.0% of the participants said they felt positive emotions during that time, and 33.7% felt negative emotions. Moreover, positive emotions were experienced more frequently—feeling "Pleased/Accomplished" (89%) and "Proud" (80%)—whereas the two emotions experienced less frequently were negative—feeling "Upset/Criticized" (24%) and "Lonely/Remote" (26%). It is surprising that, comparing the data of 2001 in the Bradburn Scale after the terrorist attacks with the series of data available since 1963, positive affect was, in general, above previous readings. In fact, looking at historical series of data, being proud of a compliment, being praised for an accomplishment, and feelings that "things were going your way" were at record highs.

In the study carried out by our group (Vazquez, Hervás, et al., 2006) after the March 11, 2004, attacks in Madrid, we found similar results. The most frequently experienced positive emotions were feelings of solidarity (85% of the sample), and the feelings of being a part of a community (82%). It is especially noteworthy that these were the most intense emotions in absolute terms, more than any negative emotion. (The intensity of positive emotions is represented in Table 4.2.)

The existence of positive emotions is not only a positive component itself, but it may also promote growth and the creation of positive meanings for the trauma. In the Madrid study just mentioned, we found that the perception of growth increased with the level of positive emotions experienced on the day of the attacks and following days; however, the feeling of growth had no significant relationship, either positive or negative, with the level of negative emotions experienced. That is, distress and negative emotions do not seem to affect the factors related to posttraumatic growth, but again, the level of positive emotions experienced promotes growth. If we analyze this relation in more detail, we observe that the positive emotions that are more closely associated with the feeling of growth after the event are those of feeling "determined" and "belonging to a nation." The correlations be-

Table 4.2
Mean and Standard Deviation of Intensity of Positive Emotions
after March 11 Madrid Terrorist Attacks

Positive Emotions	Mean	SD
Solidarity	3.12	.99
Part of a nation	3.07	1.04
Interested	2.51	1.11
Trust in others	1.77	1.04
Active	1.69	1.14
Strong	1.64	1.11
Peaceful	1.56	1.12
Determined	1.49	1.13
Grateful	1.12	1.37
Proud	1.09	1.34
Optimistic	0.74	0.92
Sense of safety	0.68	0.96
Sense of control	0.59	0.94
Cheerful	0.48	0.77
Inspired	0.42	0.78
Enthusiastic	0.30	0.65

Note: 4-point Likert Scale (ranging from 0 = none or very slightly to 4 = a lot).

Based on *The role of positive emotions on the psychological reactions following the Madrid, March 11, 2004, terrorist attacks*, by C. Vázquez, G. Hervás, and P. Pérez-Sales, 2006. Paper presented at the Third European Conference on Positive Psychology, Braga, Portugal.

tween perceptions of growth and different positive emotions are displayed in Table 4.3.

A similar example of the role of positive emotions is observed in a study that focuses on the positive effects of the 9/11 attacks and specifically analyzes the role of a resilient coping style and of positive emotions (Fredrickson et al., 2003). The most remarkable aspect of this study is that the design employed was both longitudinal and prospective. By coincidence, a few months before the terrorist attacks, 133 students from New York had been assessed on various personality measures such as optimism, resilient coping style, and life satisfaction, among others. The authors gathered data from 47 persons from the original sample (47%) 10 days after the attack. In this study, posttraumatic growth was conceptualized as the positive change in a three-factor variable: life satisfaction, optimism, and tranquility. It was found that resilient people were more apt to experience growth because of

Table 4.3
Zero-Order Correlations between Positive Emotions
and the Growth-Related Index

Positive Emotions	Growth-Related Index
Determined	.28*
Part of a nation	.26*
Attentive	.25*
Strong	.24*
Proud	.21*
Active	.21*
Grateful	.21*
Trust in others	.20*
Interested	.20*
Peaceful	.17*
Solidarity	.16*
Optimistic	.16*
Excited	.11**
Sense of control	.10**

* $p < .001$.

** $p < .05$.

Note: Only significant results reported.

Based on *The role of positive emotions on the psychological reactions following the Madrid, March 11, 2004, terrorist attacks*, by C. Vázquez, G. Hervás, and P. Pérez-Sales, 2006. Paper presented at the Third European Conference on Positive Psychology, Braga, Portugal.

the attacks and, interestingly, this relation was mediated by the level of positive emotions experienced on the day of the attacks and the following days. That is, resilient people grew more as a result of the attacks because they experienced more positive emotions after the attacks. This means that positive emotions are not only present, but may play a significant role in posttraumatic growth. This finding is coherent with the theory proposed by Fredrickson (2000), according to which, positive emotions promote broadening behavioral repertoires and building new resources (the broaden-and-build theory).

The existence of positive aspects after traumatic events does not mean that the negative aspects are negligible. In a study carried out with a Spanish sample after the March 11 attacks, a direct and significant rela-

tion was found between the perception of positive and negative changes (Barbero-Val & Linley, 2006). People with more positive changes also reported a high level of negative changes, a fact that was also found in a British sample assessed after the 9/11 attacks in the United States (Linley, Joseph, Cooper, Harris, & Meyer, 2003). Thus, these results show that the existence of positive aspects does not imply the reduction of negative aspects, but, in contrast, they seem to support the idea that, to some extent, people must feel shaken by the traumatic experience before they can generate changes (Calhoun & Tedeschi, 2005). At the social level, the effects of the coexistence of positive and negative elements can also occur. The civil clash experienced in Sri Lanka, although it has had huge individual and social costs, has promoted cooperation and cohesion in groups and community organizations, which has led to some decline in the caste system and more protagonism of women in the social and political life of the country (Somasundaram, 2004).

LIMITATIONS OF CURRENT RESEARCH

Most of the quantitative research on the effects of terrorism comes from Western academic settings (DiMaggio & Galea, 2006), although proportionally, the most frequent form of terrorism is state terrorism in nonwestern countries (e.g., Guatemala, Colombia, Sri Lanka, South Africa, Indonesia, or Peru). This cultural bias is an important issue because, just as it is important to take into account idiosyncratic posttraumatic reactions in diverse cultures (de Jong, 2002), one could assume that the same thing holds true for positive reactions.

Another important limitation of the available literature is that most of it is descriptive and mainly focuses on epidemiological or clinical aspects of terrorist impact (Engdahl, 2005; Yehuda, 2002). There are very few studies about the psychological processes that are deployed in traumatic situations of this kind (see Joseph & Linley, 2006), and there is little information about the relation between clinical variables and psychological protection factors. As noted by Tedeschi (1999), almost all we know about posttraumatic growth comes from studies whose main goal was to determine the negative effects of trauma, mainly in the area of PTSD. Furthermore, few works are directly designed to study prospectively the variables that affect the onset and maintenance of posttraumatic growth or of positive aspects, whatever they may be, related to trauma. Future research should address the study of positive emotions as a goal in itself, for which assessment instruments and appropriate designs are required that would allow researchers to better determine the impact of trauma in multiple areas and domains.

SUMMARY

Throughout this chapter, we have analyzed investigations that share the attribute of showing that terrorist attacks may have unexpected positive consequences, both at an individual and a community level.

An important sociopolitical lesson can be learned. Governments that, reasonably, aim all their efforts and resources toward minimization of the negative effects derived from terrorist attacks, should not forget an important intervention area still to be developed: the promotion of positive aspects and growth (Pérez-Sales & Vázquez, in press; Wessely, 2004). Providing a relevant space for and facilitating the appearance of positive emotions such as solidarity or feelings of union can be an important catalyst of growth. The images of global solidarity with the victims of the 9/11 attacks that were transmitted by all the televisions in the world are a good example of how a space for positive elements may be provided, and together with the data reviewed herein, they are a reminder of how positive experiences can be potentially promoted in extensive levels of the population without having to resort to direct interventions.

The positive elements that can be found in adverse situations cannot just be algebraically subtracted from the negative results. These elements can coexist, offering complex individual and collective sceneries. As concluded by Torabi and Seo (2004) from the data of their study on the changes in lifestyle in American citizens after the 9/11 attacks, although this adverse incident "may have positive effects on individuals' mental and emotional health by having a common enemy, thereupon committing themselves to the common goal in a positive and proactive manner and sharing emotional ties with other people, it may also hurt flexibility and receptivity of individuals as well as society as a whole, which tends to harbor the vicious cycle leading to political violence or conflicts" (p. 188). Moreover, research on the positive aspects of adversity is beginning to show that the effects of benefit finding on health outcomes are not necessarily positive in all the domains of psychological functioning (Bonanno et al., 2005; Helgeson et al., 2006).

Future research should continue to examine the existence of other positive aspects to complete this alternative view about the consequences of terrorist attacks. Research on the individual and collective utility of positive emotions, as well as of the possible mechanisms involved in posttraumatic growth or benefit finding, would provide society as a whole with more resources to cope with situations of terror and political violence.

Summary Points (Practice)

- Positive emotions after terrorist attacks may promote resilience and growth. Thus, it could be helpful to design interventions aimed

at the *promotion* of supporting and nourishing the emergence and maintenance of positive reactions in general, and positive emotions in particular.

- Given the role of *altruism* as a way of reacting positively to events, initiatives with the aim of channeling the diverse types of aid to the affected people may promote growth, both of the individuals and of society as a whole.
- Creating *spaces* in which to communicate emotions can have a beneficial effect on positive adaptation to the effects of the trauma.
- As with any other kind of trauma, it is important to assess and provide feedback about the *learning experienced* at the individual and collective level to promote a more complete perspective of the situation.
- *Symbolic elements* (e.g., flags, monuments, demonstrations) seem to be important to the processing of these kinds of events. In-depth research is needed to investigate how to channel these elements to achieve better adaptation.

Summary Points (Research)

- Most of the evidence gathered on the positive effects of traumatic events has been derived from studies whose goal was, paradoxically, to assess the negative impact of trauma. We need a new generation of studies whose chief aim is the direct assessment of individual and collective positive effects of terror, which use a wider and more comprehensive array of measures.
- When exploring positive and negative effects of terrorism, researchers should pay attention to the effects not only in individuals directly or indirectly affected but also in the *general population*, as this kind of violence is often directed at society itself.
- Researchers should analyze the effects of *different types* of terrorism. Most of the current empirical evidence is mainly based on just one type of terrorism that is common in modern Western societies (episodic attacks made by terrorists from other nations). This type of terrorist violence is not representative of the type of terrorism to which most world societies are exposed.
- We need more longitudinal studies on the dynamics of the changes, either positive or negative, induced by terrorist threats. It would be highly relevant to assess the extent to which initial positive emotions (e.g., feelings of social cohesion) are related—and how—to effects typically associated with the concept of posttraumatic growth (e.g., long-term improvements in individual or social functioning, changes in spirituality).

- It is also necessary to analyze whether some apparently positive effects (e.g., upsurge of patriotism) could have *collateral negative effects* (e.g., feelings of revenge).
- Further research is also needed on the extent to which short- or long-term positive reactions generated by terrorist attacks are adaptive or somehow associated with positive health outcomes.

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