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## The Chaotic Aftermath of an Airplane Crash in Amsterdam

### A Second Disaster

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#### INTRODUCTION

At the time of the 1992 Bijlmermeer plane crash, no one would have dreamt that more than 6 years after the event, the entire country would be glued to the television to witness the demise of what could only be characterized as a chaotic aftermath of the disaster. In 1998, the Dutch Parliament decided to organize a Parliamentary inquiry to determine the causes and consequences of the crash and its possible ramifications for public health. An inquiry committee was appointed, exhaustive investigations were launched, and public hearings were broadcast on primetime national television. Half a million viewers followed the 6 weeks of “the Bijlmer Inquiry”—named after the Bijlmermeer district of Amsterdam—where the crash occurred. Front pages were filled with pictures and reports of breathtaking interrogations. The climax came when an air traffic controller testified that he

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had been instructed shortly after the crash to keep information about lethal substances that were possibly on board the cargo airplane "under his hat." Although this statement was later proven to be false, rescue workers had not been warned at the time to take extra precautions. Since that day, the expression "keeping something under your hat" has become part of the everyday household vernacular. It captured the widespread conviction that information was deliberately being withheld.

Disasters are not only characterized by the death and destruction they inflict, but also by their traumatic effects on survivors, eyewitnesses, and rescue workers. Similar traumatic effects have been observed after combat experiences, peacekeeping operations, and other UN missions.

The purpose of this chapter is to reconstruct the events of the Amsterdam airplane crash and to analyze them specifically from the mental and public health perspectives. We will examine the chronology of events and the narratives that accompanied them. Then, we will tentatively offer explanatory models for the uncontrolled aftermath of the crash and will attempt to draw some conclusions and lessons for the future.

## FACTS AND CHRONOLOGY

### **The First Period (1992–1994)**

On October 4, 1992, an El Al Boeing 747 cargo jet lost two engines from its right wing without being noticed by the crew. The captain, confronted with his airplane being out of control, decided to return to Schiphol Airport but the plane crashed onto two apartment buildings in Amsterdam's densely populated Bijlmermeer district, also known as "the Bijlmer." At a time when most people were enjoying their evening meal, the tranquillity of the late summer Sunday was transformed into a horrific inferno. Buildings were obliterated and human beings incinerated in the towering sea of flames that arose from the tanks of the jumbo jet. Some 39 residents and 4 crew members lost their lives. An enormous rescue operation got under way to combat the blaze and bring the survivors to safety. The nearby Bijlmer sports hall was taken over to provide initial relief to the survivors.

Remarkably enough, very few of the survivors had suffered immediate physical injuries from the crash. Hundreds of doctors and nurses at the Amsterdam Academic Medical Center (AMC), University of Amsterdam, only a few miles away, were on duty throughout the evening without having to provide services.

This first period was characterized by the issues who did it and what caused it. Journalists asked a lot of questions why a damaged plane was allowed to try to return to Schiphol Airport over a densely populated city

and did not, for instance, attempt a forced landing on a nearby lake (the IJsselmeer). When the rubble was cleared at the end of the week, the final count of victims proved to be far lower than had been feared. Initially, estimates of some 1,500 victims were calculated. When the total figure of 43 victims was established after one week, rumors mounted that numerous illegal foreigners, living in the apartment buildings, had presumably died out of view of public knowledge. Likewise, there were rumors about victims who had been totally incinerated. After a few weeks of public debate and wild guessing about the actual number of victims, a general pardon was granted by the Dutch government to all illegal foreigners who could prove they lived in the buildings concerned. This paved the way for illegal aliens to come forward and report the loss of relatives and friends and eventually led to the final estimated death toll. At that time, little attention was given to the third issue, namely what hit us.

As the public debate subsided, relief work and aftercare services were implemented. The bulk of the initial relief work consisted of arranging for shelter for those who had lost their homes and financial support for those who needed it. The Salvation Army, churches, and residents' organizations set up support facilities for the dazed survivors and eyewitnesses of the disaster. The following Sunday, 10,000 people took part in a silent march in the Bijlmermeer, and a memorial ceremony—in the presence of Queen Beatrix and the prime minister—was held in a large hall elsewhere in the city.

The emphasis in the relief work soon shifted toward the psychological aftereffects of the disaster. Based on the state of the art at the time, a campaign was launched in the media and leaflets were distributed in many languages to inform people about post-traumatic stress disorder (PTSD). General practitioners and mental health care professionals were instructed about potential psychological effects. The slogan "A normal reaction to an abnormal event" was coined to prepare people for the impending psychological aftereffects and simultaneously to reassure them that such effects were normal. The implicit expectation was that long-term psychological damage would be limited by this short-term "normalization" of the emotional responses. The Southeast Amsterdam Institute for Community Mental Health Care (RIAGG) promptly set up a direct intervention program for the victims and was also active in providing care to children in local schools. The Amsterdam Municipal Health Service (GG&GD) coordinated the provision of aftercare and deployed professionals to make home visits and to look after victims who were relocated to houses farther away. The AMC took charge of the public education campaign and the training and instruction of professionals. In addition, the Department of Psychiatry AMC initiated research into the effects of the disaster on the victims and eyewitnesses and on the care provided to police officers.

The combined effect of all these efforts was that several hundred adults and children received some form of trauma intervention. The estimated total number of people who had directly experienced the crash, including rescue workers who had come into the area during the early hours after the crash, was somewhere between 1,000 and 1,500. A research convenience sample of 340 of the affected population was assembled six months after the crash. The sample was composed of volunteers who experienced the crash at close range; they were given monetary compensation for participating in the research. It was not possible to create a random sample because of Dutch legislation on individual privacy. Eighteen months after the crash, 136 of the 340 subjects were selected for a follow-up interview, including 73 individuals with 0–5 post-traumatic stress (PTS) symptoms and 63 individuals with 6 or more PTS symptoms (Table 5.1).

Respondents' post-traumatic stress reactions were expressed in two diagnoses: PTSD and partial PTSD. A structured diagnostic interview for PTSD was conducted; this so-called PTSD interview addressed the 17 PTSD-symptoms according to DSM-III-R. The term partial PTSD refers to cases in which respondents had PTS symptoms but did not meet criteria for all three of the required symptom clusters (Carlier & Gersons, 1995).

These findings resulted in several recommendations in 1993, none of which was acted upon at the time. When the report of the inquiry committee was debated in Parliament in June 1999, these recommendations were repeatedly cited (Carlier & Gersons 1997; Carlier, van Uchelen, Lamberts, & Gersons, 1993; Carlier, van Uchelen, Lamberts, & Gersons, 1995; Gersons & Carlier, 1993, 1994; Yzermans et al., 1999):

1. *Information about the aftercare of victims.* It is important to inform victims about all available services (victim and peer support), for example in a leaflet.
2. *Central information point.* It is very important to have a central advise and information point. All possible victims should be made aware of its existence and it should be operational for several years. It should be outreaching and inform victims about all relevant issues. A small newspaper could be distributed regularly to keep victims informed.
3. *Monitoring.* Long-term monitoring of aftercare provision is essential. It is also important to monitor (developments in) health problems, preferably using existing registration systems and databases.
4. *Mental health care provision following disasters.* A large proportion of the survivors had persistent, chronic PTSD. In most cases, treatment had been too brief and too discontinuous to achieve a satisfactory outcome. Moreover, PTSD often does not stand alone in the diagnosis, but occurs in combination with other disorders. It is important for

both the referring general practitioners and for the care providers at the receiving end, to know that is taking care for medical costs for victims of a disaster. Victims do not always find their way to mental health services (see 1 and 2).

5. *Peer support.* Many victims were offered dwellings outside the area, so they could avoid a daily confrontation with the disaster scene. However, many of them missed the ease of bumping into friends and acquaintances in the well-known "ethnic subculture," and years later, many of them moved back to the area.
6. *Financial problems.* An emergency fund has to be established for long-term problems to which people could apply.

Despite the fact that the wide range of opportunities to receive care offered to the public was generally considered to be quite satisfactory, this did not result in a low rate of post-traumatic stress reactions. The percentage of respondents with PTSD remained virtually unchanged across the two waves of assessment, and the needs for psychological help were greater than the care that was actually utilized. Although the large majority of respondents did make use of mental health care at some time, treatments were often terminated prematurely, notably because of financial constraints or perceived ineffectiveness of the treatments.

It is also unclear to what degree the emotional disturbances were partly attributable to a disruption of the social environment. Beyond all the emotional distress brought on by the loss of friends or relatives, for many of the victims the disaster also meant the loss of an entire subculture that was characteristic of the Bijlmermeer. The Bijlmermeer neighborhood consists of 90,000 people originating from 50 different countries, especially Surinam, the Netherlands Antilles, and Ghana. Once removed from this subculture, many victims were thrown into social isolation, at least temporarily, which was exacerbated by the emotional problems. In addition, some victims suffered from other mental disorders that may or may not have been trauma related. Indeed, our data showed that most such respondents had already experienced psychological problems *before* the disaster.

One tenth of our respondents (Carlier, van Uchelen, & Gersons, 1995) saw their claims for compensation of psychological damage denied by Boeing, the aircraft manufacturer. The reasons given were that the respondent had not been at home on the evening of the crash or had "lived outside the disaster area as defined by Boeing" (the so-called danger zone). Also not eligible for compensation were people who had experienced the crash from very nearby (eye- and earwitnesses) but who lived outside the official danger zone. On the whole, little is actually known about the association between the severity of illness in victims and the honoring or denial of damage claims.

**Table 5.1 Shifts in Estimated Number of Victims, Study Aims, and Main Health Problems Reported/Investigated Over Time**

Period	Estimated number of victims at the time	Type of study	N	Sample characteristics	Main results <sup>1</sup>
Immediately after crash (October 1992)	1,000-1,500 (figures from local authorities)	counting	90,000	39 residents and 4 crew members died	Not applicable
April 1993	1,000-1,500 (not counted since 1992)	Convenience sample among people who experienced the crash at close range (N = 136; a selection of the cohort N = 340)	136	57% men; 43% women; mean age 35 years (SD 12.6)	26% PTSD 44% partial PTSD
April 1994	1,000-1,500 (not counted since 1992)	See April 1993	115	59% men; 41% women; mean age 36 years (SD 11.8)	24% PTSD 32% partial PTSD
June-July 1998	1,000-1,500 (not counted since 1992)	Interviews among 52 GPs in region (Amsterdam SE)	90,000 patients on the list	Not applicable	Some 300 patients presented symptoms possibly related to the crash (psychological and unspecified problems)

June-July 1998	1,000-1,500 (not counted since 1992)	Exploratory telephone survey to assess health effects attributed to the crash among people who phoned open call center	846	66% men, 34% women; mean age 42 years (SD 12) 39% residing in apartments concerned, 12% in neighbourhood and 49% elsewhere	3,463 symptoms presented (mean 4.1, SD 2.9) Five clusters of symptoms: General unspecified 77% Psychological 42% Respiratory 33% Skin 25% Musculoskeletal 22%
March-April 1999	6,280	Registered for large-scale physical examinations		42% residents 52% rescue workers 6% Schiphol Airport/KLM	In progress

<sup>1</sup>See text for case definitions and method of assessment.

The *persistence* of the post-traumatic stress reactions has major implications for relief work and aftercare in the wake of future disasters. It was concluded that the persistence of PTSD for as long as 18 months after the disaster may have been related to a variety of adverse circumstances that subsequently arose, as covered in the next section. These could have caused the victims' symptoms to worsen and greatly impeded them in dealing with the trauma effectively (see also Groenjian et al., 1995). Furthermore, the mental health interventions provided to many victims were much too short in duration to achieve any lasting result, did not follow an explicit protocol, and, in many cases, did not prove to be effective even in the short term.

Several lessons were learned from this period: Victims repeatedly need to be provided with information. The trauma interventions themselves should focus on how to cope with symptoms over a much longer period. Mental health care services, in particular, need to prepare themselves for prolonged emotional distress in a large percentage of the victim population. Care professionals should receive more thorough instruction about the appropriate actions to take, the appropriate treatments to give, and the most effective ways of dealing with the symptoms over an extended period.

### **The Second Period (1995–1999)**

The preceding period was dominated by the interactions between post-traumatic symptoms and psychosocial problems in the wake of the airplane disaster. The second period was no longer characterized by determining the causes of the accident or the number of victims, but by growing suspicions about the plane's cargo and the potentially harmful *physical* effects this might have had on victims and rescue workers. The black boxes, containing cockpit voice recorders and data flight recorders, were never found, which is very unusual in an accident on the ground. Rumors started about men in white "space suits"—Mossad agents it was assumed—who, within 30 minutes after the crash, took things from the crash scene and disappeared in a helicopter. The initial information on the cargo (e.g., flowers, computers, and perfume) had been based on an incomplete list. Extensive detective work by journalists revealed that the plane had also been fitted with depleted uranium in its tail, as a counterweight. The next discovery was that the plane had even contained military goods, among them the chemical dimethylmethylphosphonate (DMMP), a component of the nerve gas Sarin. Such reports, coupled with the Dutch and Israeli government's inability to produce the full cargo specifications, greatly stirred the fears of Bijlmermeer residents and rescue workers. Action groups were set up, which launched their own investigation of toxic substances and radioactivity. Some of the worried residents and rescue workers publicly aired their physical complaints, such as skin rashes, respiratory problems, and fatigue, linking these to their



presence at the disaster scene. Similar concerns arose among employees of Schiphol Airport who had worked in a hangar where the plane's wreckage had been stored. Tests carried out in the hangar detected slightly elevated levels of ionizing radiation near the wreckage.

A virtually unstoppable, tragic chain of events ensued, in which the public authorities (at least in the perceptions of the general public) responded too slowly and were too uncoordinated, at times even supplying factually incorrect information. Meanwhile, one of the action groups, named Visie (Vision) attempted to collect information on its own. It commissioned a Swedish laboratory to test the blood and feces of the victims and rescue workers for traces of uranium. Suspicions toward the authorities grew when this private investigation revealed traces of depleted uranium in the subjects' feces. Even though the scientific community was quick to point out the shortcoming of the Swedish study (e.g., there was no mention of a control group or other reference data and at least one of the subjects used antacids), the result was that information from the government was no longer trusted.

At this point, it seemed that everybody was making some contribution to the uproar. Specifically individuals attributed their medical problems to the crash; tenacious journalists were determined to leave no stone unturned and often generalized from individual cases; and members of Parliament put the matter back on the political agenda after several years of neglect.

By 1997, so many press reports about physical complaints attributable to the crash had appeared that the national chief health care inspector commissioned the AMC to conduct an investigation into the health problems. The study was headed by a professor from the Department of Psychiatry, who directed the previous study of the psychological consequences in residents and rescue workers (BPRG). The hospital appointed a team of investigators who initially considered performing a comprehensive clinical screening of the victim population. In the discussions that followed, the team concluded that such action should not be taken until it was certain that the cargo had contained toxic substances, since that information was required for any focused physical examination. Another methodological problem was the specific number of victims and rescue workers was unknown.

Therefore, because it was impossible to conduct a targeted epidemiological or toxicological investigation, the research team decided first to conduct an exploratory study focused on describing the number of persons who attributed their health complaints to the disaster and the nature of those complaints.

The following method was used: In the Netherlands, every citizen is required to be on the list of *one* general practitioner who acts as a gatekeeper to specialist care. Therefore, it was reasoned that an increase in morbidity in the stricken area should be apparent in their medical files. General practitioners (GPs) in the Bijlmermeer were interviewed to see whether they

had noticed an increase in disaster-related illnesses. In addition, a toll-free call center was opened for 2 months to enable people to report their health symptoms. The Symptom Checklist-90 (SCL-90) was sent to all people who presented their complaints to the call center. Analysis of the data so obtained would help to answer the question of whether a focused physical examination was advisable. As an additional precaution, after obtaining informed consent, the medical files of the people who called the toll-free center and completed the SCL-90 were checked to determine whether the GPs were informed about the health complaints.

The AMC call center was open in June and July 1998. A total of 903 people phoned the line, 846 of whom presented at least one health problem attributed to the disaster (Table 5.1). The nature of the health problems pointed exclusively to PTSD and to medically unexplained physical symptoms. A doctor was visited for the majority of the health problems. According to the medical files, 13% of the health problems were already known to the general practitioner before the crash in 1992. On the other hand, 15% of the health problems originated in the previous 6 months and, in total, 60% originated in what we call "the second period." The results of the SCL-90 showed a lot of distress (2 standard deviations higher than a Dutch reference population on average. The five symptom clusters bore a striking resemblance to the so-called Gulf War syndrome and were classified as "unexplained physical symptoms," suggesting a possible psychological origin.

The AMC concluded that these results gave no grounds to proceed with medical screening of the victims: no specific pattern of symptoms was detected, and 87% of the problems were treated by (AMC-)doctors. Its primary recommendation was that the general practitioners should devote special attention to patients with PTSD. A special protocol-based treatment program (state of the art in 1999) was set up for PTSD. A few weeks later the parliamentary inquiry committee presented their results (Eindrapport Bijlmermeer Enquête, 1999), in which, finally, the complete cargo list was published: no unknown toxic substances were aboard the plane.

Despite this, further intense political pressure induced KLM Arbo Services—the department that monitors working conditions at the airline—to conduct a large-scale physical examination of the affected population. At the time of this writing this is still in progress. It is hoped that this will finally allay the fears of the residents and rescue workers.

## DISCUSSION

Clearly the Bijlmermeer plane crash was a unique and instructive experience for the Netherlands in many ways. The uniqueness lay especially in the two distinct periods in the crash's aftermath. The initial disaster relief

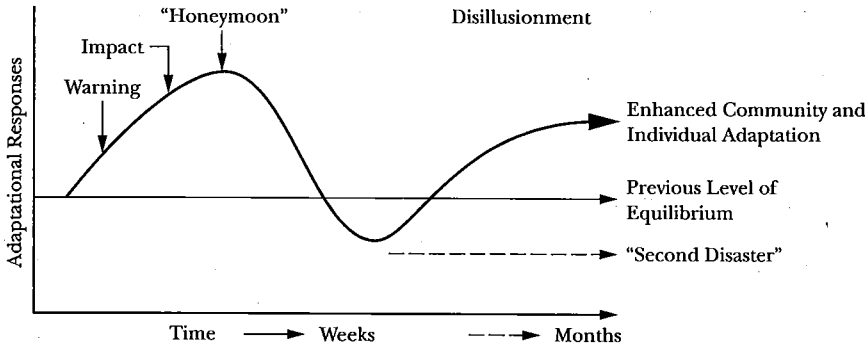


Figure 5.1. Phases of response to a disaster. Source: B. Raphael, *When disaster strikes: A Handbook for the Caring Professions*. Boston: Unwin Hyman, 1986, p. 8.

period, focused on the post-traumatic effects, was followed by a second period of deepening mistrust, centering around what was commonly called unexplained physical symptoms (Barsky & Borus, 1999; Havenaar & van den Brink, 1997; Wessely, Nimnuan, & Sharpe, 1999). A virtually unmanageable political crisis resulted, which seriously undermined public confidence in the government.

On the basis of our knowledge of PTSD and disaster psychology, we would like to suggest some possible explanations for the uncontrolled aftereffects of the crash. Several different adaptational phases can be distinguished in the aftermath of a disaster: a warning phase in specific conditions as tornadoes; an impact phase, a “honeymoon” phase (including the so-called cry-out phase), a disillusionment phase, and finally, what we will add, a reintegration phase (Figure 5.1).

The impact phase is the 24–36-hour period of recoil and shock immediately following the disaster, in which the urge to survive is paramount. This is followed by a cry-out phase characterized by a need to talk at length about the experience and give vent to rage and grief. This gives rise to a feeling of intense solidarity among survivors and other people involved in the disaster. For this reason, it is also called the “honeymoon” phase. In the wake of the Bijlmermeer crash, such solidarity could be seen in the silent march and the national memorial ceremony. The disillusionment phase is reached when the nonvictims resume their normal lives. Victims feel cut off from the solidarity and compassion. Bureaucratic structures, which had temporarily geared themselves to respond flexibly to the victims’ needs, shut themselves off again and return to the formal procedures in place before the disaster. The difficulty then is whether the authorities and care organizations are still able to provide enough services to minimize the victims’ feeling of rejection. We therefore recommend that an advice and information center must be

kept open for an extended period, to coordinate the response to the victims' problems. Victims in this phase can easily turn into complainers. The suspicion promptly arises that they are using lawyers and insurance companies to "exploit their victimhood." This has been described as secondary victimization. First they fall victim to the disaster, then they are stigmatized as profiteers.

Figure 5.1 clearly illustrates how a "second disaster" occurred after the Bijlmermeer crash. A process of collective secondary victimization was set in motion, and the authorities and care services lost control of it. It was this second disaster that ultimately led to the parliamentary inquiry. By that time, restoring public confidence and achieving "enhanced community adaptation" had become virtually impossible tasks for the government.

It is also important to assess the course of events in light of what is now known about the etiology of PTSD. Characteristic of PTSD is a perceived loss of control. The accustomed sense of security has vanished. The victim fears being struck by a new calamity. PTSD, which probably plagued many of the victims to a greater or lesser extent, is characterized by symptoms such as reexperiencing, hypervigilance, and poor concentration. The last two symptoms are curious, because victims are sharply alert to danger but have trouble focusing on more trivial matters. This all leads to sleep disturbances and intense fatigue. Presumably such complaints are perpetuated by feelings of rage about what has happened and by feelings of grief—not only at the loss of loved ones, but at the destruction of a life perspective and fundamental sense of security. Another common symptom is the emotional volatility of both the victims and many of the people affected by the disaster's aftermath. In short, emotions prevail over reason. The parliamentary inquiry was a clear reflection of such a phenomenon. Even the parliamentarians themselves came under the spell of emotions. They took on the rage of the victims, and somebody had to be blamed. Both authors testified under oath, one to explain the state of the art of diagnosing and treating PTSD, the other to explain the preliminary results of the AMC exploratory study. They, and the AMC staff with them, were also the center of criticism by victims, action groups, lawyers, and colleagues in the scientific community. They were put under considerable political pressure to conduct medical screening of the victims who they did not judge to be desirable from a scientific or clinical point of view.

The aftermath of the Bijlmermeer crash also teaches us a third lesson. Beyond the post-traumatic complaints that arise from the acute stress of a disaster, a number of studies have also shown that *chronic* stress can arise out of a persistent fear of bodily harm from exposure to noxious stimuli such as radiation or poisons (Carrier & Gersons, 1995; Havenaar & van den Brink, 1997). The chronic anxiety is then maintained by nagging suspicion and the spread of physical symptoms. Although the Gulf War produced a

minimum of fatal casualties for U.S. forces, many soldiers returned home with "unexplained physical complaints" quite similar to those reported to the AMC call center by the Bijlmermeer victims. In British veterans the threat of SCUD missiles containing poison gas was found to be a risk factor for unexplained symptoms (Unwin et al., 1999).

Persons who are exposed to traumatic events, report (nonspecific) psychological and general physical symptoms that stem from a comparable, restricted symptom repertoire. Similar symptoms are reported following different types of traumatic events, civil and military, among victims and rescue workers. In our opinion, the common factor across these incidents is an ineffective and/or disconnected response by authorities that leads to chronic stress-related health problems.

Persons suffering from medically unexplained symptoms confront the health care services with a difficult problem. Patients demand a physical explanation for their illness. Although the doctors tell them time and again that they do not have any "real" disease, the information seldom reassures them and their symptoms usually persist. They must have a disease, and if the doctors can't find it, the suspicions continue to gnaw. The victims fear they are being "psychologised." Despite the frequent use of the words "trauma" and "stress" in the public debate, the mental health care sector stood conspicuously on the sidelines during the aftermath of the Bijlmermeer crash. To make matters worse, prominent spokespeople for the victims reacted angrily at any attempt to give psychological explanations for their physical complaints. To say that their physical ailments were "in their heads" was similar to not taking them seriously. The inquiry committee implicitly acknowledged that psychological factors were behind the health complaints, but shied from actually stating so. Rarely has such an abrupt line been drawn between body and mind in a public debate.

A special role was fulfilled by the media. There was a tendency to produce more fears than facts, suggesting that people were exposed, resulting in major health effects. On television, 7 years after the crash, even in 30-second items, images of the inferno were shown (many persons told the interviewers of the call center this to be untenable). Individual cases were generalized, and "new" diseases and syndromes were discovered and attributed to the disaster. A few individuals (members of action groups, lawyers, and members of Parliament) were asked to comment on nearly everything, often unprepared. In some cases, when the news turned out to be false, no rectifications were published.

In every respect, the events that followed the Bijlmermeer plane crash culminated in a second disaster. Patterns of acute and chronic stress brought forth an amalgam of psychological and physical complaints. The parliamentary inquiry on the disaster functioned as a mirror, reflecting the unresolved

emotions left behind by the disaster and all the uncertainties that arose in its aftermath. The phenomenon of loss of control was observable not only in the victims themselves. It manifested itself in public institutions, health care organizations, media, national and local authorities, the health ministry, and the Parliament. Stopping a downward spiral like this one costs many times the amount of money and effort that would be required for early interventions to restore the disaster victims' sense of control. Besides taking the belated steps that are still needed today to overcome the lingering consequences of the Bijlmer crash, we should avoid unnecessary mistakes in future. For caregivers and for the authorities it does not hurt to be alert. For patients suffering from PTSD, on the contrary, it hurts to be alert. On a societal level the aftermath of the Bijlmermeer crash may be interpreted as a lack of balance between hypervigilance (on the part of victims and their advocates, including the media) and denial and repression, later also followed by hypervigilance and outcry in other sections of society.

In May 2000 the Netherlands was visited by another disaster: In the city of Enschede, a depot of fireworks exploded sweeping away a neighborhood in the center of the city, killing 22 persons and wounding another 1,000 people. In the aftercare of this disaster, authorities try to put in practice the lessons learned from the Bijlmermeer crash, in which the recommendations delineated earlier in the chapter played an important role.

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