

# Who Can I Trust? Extended Fear During and After the Utøya Terrorist Attack

Petra Filkuková and Gertrud Sofie Hafstad

Norwegian Centre for Violence and Traumatic Stress Studies,  
Oslo, Norway

Tine K. Jensen

Norwegian Centre for Violence and Traumatic Stress Studies,  
Oslo, Norway and University of Oslo

**Objective:** The aim of the study was to investigate specific peritraumatic reactions among adolescent and young adult survivors of the 2011 terrorist attack on Utøya Island, Norway. The authors focused specifically on a phenomenon that has so far not been thoroughly investigated: fear of nondangerous stimuli (“extended fear”) during and immediately after the traumatic event. **Method:** In total, 325 survivors of the shooting on Utøya Island were interviewed 4–5 months after the attack and provided a free narrative of the event. Posttraumatic stress symptoms were assessed using the UCLA PTSD Reaction Index; depression and anxiety were assessed using HSCL-8. For the purpose of the current study, the authors chose participants who were under the age of 26 at the time of the terrorist attack ( $M = 18.4$  years), which constituted the vast majority of the total sample (93%). **Results:** The authors found that 54% of the sample felt threatened during and immediately after the attack, not only by the perpetrator himself, but by other people as well; in most cases by people who came to help them (medical personnel, policemen, volunteers). The participants who mentioned experiencing extended fear in their trauma narratives had significantly higher scores of posttraumatic stress symptoms, anxiety, and depression 5 months after the attack than participants who did not peritraumatically experience extended fear. **Conclusions:** Early detection of extended fear can help in identifying individuals who will later develop symptomatology. In addition, knowledge of the phenomenon could help policemen and medical personnel understand survivors’ seemingly irrational reactions.

**Keywords:** peritraumatic reactions, extended fear, posttraumatic stress symptoms, depression, anxiety

It is not easy to predict who will develop posttraumatic stress disorder (PTSD) after a traumatic event and who will not. Gender and personality differences have an impact, as does prior exposure to other traumatic events (Bernat, Ronfeldt, Calhoun, & Arias, 1998; O’Kearney & Perrott, 2006). The attributes of the traumatic event itself also have an influence, complicating comparisons of survivors of different traumatic events (e.g., child abuse vs. earthquake).

The validity of the initially proposed linear dose–response relationship between the level of trauma exposure and subsequent symptomatology has been discussed, especially when it comes to objective measures of the exposure (Kaysen, Rosen, Bowman, & Resick, 2010). Most highly exposed individuals do not develop PTSD and at the same time there are also mildly exposed individuals with high symptom levels (Ozer & Weiss, 2004). Research

attention has therefore focused not only on objective attributes of the trauma exposure but also on subjective evaluation and experience of it. *Peritraumatic experience* was defined as an experience occurring during or immediately following the traumatic event, the upper limit for the experience to be called peritraumatic was not concretely specified (Bedard-Gilligan & Zoellner, 2008).

An individual’s response to a trauma includes cognitive appraisals of the situation, negative emotions such as fear, anger, disgust and sadness, physiological reactions and active and passive behaviors (Bovin & Marx, 2011). Multiple studies have investigated whether there is a relationship between specific peritraumatic reactions and development of PTSD after various types of traumas. Kaysen et al. (2010) discovered that 3 months after sexual assault, peritraumatic appraisal of life threat was a much better predictor of PTSD than was the duration of the assault. Peritraumatically perceived threats have also been shown to have an impact in war traumas, as among Vietnam veterans whose combat experience did not directly influence PTSD, but rather made its impact indirectly through perceived threat (King, King, Gudanowski, & Vreven, 1995). In a study on survivors of motor vehicle accidents, peritraumatic dissociation and peritraumatically perceived life threat were among predictors of chronic PTSD (Ehlers, Mayou, & Bryant, 1998). Brewin, Andrews and Rose (2000) found higher prevalence of peritraumatic feelings of intense helplessness, fear and horror among survivors of violent crimes with high PTSD than among those with low PTSD. In a sample of college students, Bernat et al. (1998) found higher levels of PTSD symptoms to be

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Petra Filkuková and Gertrud Sofie Hafstad, Norwegian Centre for Violence and Traumatic Stress Studies, Oslo, Norway; Tine K. Jensen, Norwegian Centre for Violence and Traumatic Stress Studies and Department of Psychology, University of Oslo.

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Correspondence concerning this article should be addressed to Petra Filkuková, Norwegian Centre for Violence and Traumatic Stress Studies, P.O. Box 181 Nydalen, 0409 Oslo, Norway. E-mail: [petra.filkukova@nkvt.no](mailto:petra.filkukova@nkvt.no)

associated with peritraumatic perception of the threat of being killed or injured, negative emotions, acute panic reactions and peritraumatic dissociation. Brunet et al. (2001) identified a relationship between PTSD and a composite measure of peritraumatic distress (emotions, cognitions, physiological reactions). Ozer, Best, Lipsey, and Weiss (2003) discovered in their meta-analysis of 67 studies of posttraumatic stress disorder that peritraumatic psychological processes are much stronger predictors of PTSD than prior characteristics such as earlier traumatic experiences, prior psychological adjustment and psychopathology in a family. The importance of an individual's peritraumatic interpretations and emotions for subsequent symptomatology was also emphasized by Brewin, Dalgleish, and Joseph (1996); Ehlers and Clark (2000); Foa and Kozak (1986) and Halligan, Michael, Clark, and Ehlers (2003).

Ehlers and Clark's cognitive model for the development of PTSD suggests that the way the individual understands and interprets a traumatic event contributes to the development as well as the maintenance of symptoms. According to Ehlers and Clark (2000) PTSD becomes persistent when an individual processes the trauma in a way that leads to a sense of serious, current threat ("nowhere is safe"). The sense of threat arises as a consequence of excessively negative appraisals of the trauma and/or its sequelae and difficulties integrating elements from the traumatic event into memory.

According to Bovin and Marx's model (Bovin & Marx, 2011), traumatic stress response starts with the appraisal that the situation is negatively affecting one's well-being and exceeds or at least taxes one's coping resources (e.g., life threat appraisal). The appraisal takes place automatically, unconsciously and continuously. The appraisal is followed by an emotional reaction, which involves not only emotions (e.g., fear), but also additional cognitions (e.g., estimate of one's chance of survival) and physiological responses (e.g., thumping heart). The emotional reaction is followed by peritraumatic behavior, which can be either active (e.g., fighting, running away) or passive (e.g., tonic immobility or "playing dead"). Incoming environmental cues are appraised sequentially, but the process is recursive and involves corrections and adjustments. Each appraisal is continuously checked and updated, resulting in a corresponding update in related emotions, physiological reactions and actions (e.g., calming down after realizing that the threat is less serious than originally estimated). Based on previous studies, Bovin and Marx (2011) suggested that peritraumatic reactions are not perfectly predictive of a PTSD diagnosis and that their negative predictive value (absence of peritraumatic reactions predicts absence of PTSD) is higher than their positive predictive value (only a subset of individuals with peritraumatic reactions will develop PTSD).

Bovin and Marx's model has similarities with Scherer's model of emotional experience, which also intertwines cognitive appraisals with emotions and presupposes a dynamic emotion process with repeated appraisal checks (Scherer, 2009). According to this model, emotional experience consists of (a) unconscious reflections and regulations (unconscious cognitive appraisals, physiological reactions, action tendencies), (b) conscious subjective emotional feelings, and (c) verbalization of emotional experience.

In our study, we investigate a specific peritraumatic reaction of adolescent and young adult survivors of mass shooting under the paradigm of Bovin and Marx's model and Scherer's model. Ex-

tended fear, which we introduce in the article, involves emotion (fear) and related cognitions (threat appraisal of specific stimuli) and is subject to a dynamic process of continuous appraisal checks. Apart from describing the understudied peritraumatic reaction of extended fear, we also relate it to survivors' subsequent symptomatology.

### The 2011 Norway Attacks

On July 22, 2011, there were two sequential terrorist attacks in Norway. First, a bomb exploded in the government quarter in Oslo. Then, the attack continued with a spree shooting on Utøya Island, approximately 38 km from Oslo, where the Norwegian Labor Youth organization was holding a summer camp. The terrorist came to the island in a disguise; he was dressed as a policeman and claimed that he had been sent to the island to secure the summer camp after the terrorist attack in Oslo. At the point when the terrorist arrived to Utøya, there were 564 people on the island, most of them adolescents.<sup>1</sup> It took 1.5 hr from the time the shooting started for the terrorist to be arrested. The island has an area of only 0.12 km<sup>2</sup>; thus, the possibilities for an individual to successfully hide for an extended period of time were very limited. Therefore, many decided to try to escape by swimming away from the island. The lake was about 15°C (59°F) and distance to land was 600–1000 m, depending on where one started to swim. Most swimmers were rescued from the lake by volunteers, who took out their boats when they heard shooting from the island. As a result of the attack on Utøya, 69 people died and many were injured.

### Study

#### Aims of the Study

Compared to school shootings that have taken place in other Western countries, the shooting on Utøya Island was of much longer duration, lasting for 1.5 hr. The survivors therefore had an extended period of time to process the situation and thus might provide us unique data about how adolescents and young adults think and act when they suddenly face a life threat. The overall aim of this study was to contribute to the knowledge of what aspects of peritraumatic situations may have implications for mental health and contribute to the development of posttraumatic stress symptoms.

On the basis of thorough reading of the interviews, we identified one type of peritraumatic reaction that has so far not received much attention in trauma literature: fear of nondangerous stimuli, for which we coined the term *extended fear*. The aim of the study is twofold: a thorough description of this specific peritraumatic reaction and an investigation of the relationship between peritraumatically experienced extended fear and later symptomatology.

### Method

#### Participants and Procedure

The police registered 495 survivors of the terrorist attack on Utøya Island. Three months after the terrorist attack, the 490

<sup>1</sup> The few adults on Utøya Island were also related to the summer camp; the island is uninhabited and not used by tourists for recreation.

survivors who were at least 13 years of age were sent invitations by post to participate and were subsequently contacted by phone. One hundred sixty-five survivors could not be reached by phone or declined to participate, whereas 325 (66.3%) survivors were interviewed face-to-face, most of them at home. There were no significant differences in gender or age between participants and non-participants. Most interviews (95.4%) were conducted in November and December 2011. The interview was semistructured and was performed by health personnel. Prior to the interviews, training was provided regarding interviewing techniques in traumatized populations.

Interviewers first briefly introduced the study and then asked participants to freely describe what they experienced during the terrorist attack; filling out questionnaires (scales for PTSD, depression and anxiety, etc.) followed after the trauma narrative. When asking about the trauma narrative, an interviewer said, "I know that you were on Utøya Island during the terrorist attack. Tell me about it." If the participant remained silent, the interviewer further prompted him/her to talk by saying: "Tell me where you were when the perpetrator arrived to Utøya Island." Afterward, the interviewer intervened only when it was necessary to invite the participant to continue in the narrative ("What happened then?") or when the interviewer needed elaboration of an unclear part ("Tell me about it" or repetition of the last sentence).<sup>2</sup> Participants' accounts were audio recorded and subsequently transcribed verbatim.

To minimize the role of age on the analyses, we limited the sample in this article to include those who were under the age of 26. This included the vast majority of the total sample ( $n = 302$ ; 93%).<sup>3</sup> Six trauma narratives were lost because of technical recording issues. Thus, the final sample included in the current analyses comprised interviews of 296 participants (48.6% women, 51.4% men); mean age of the sample was 18.4 years. The total amount of the analyzed material was approximately 2,200 pages ( $M = 7.4$  pages per narrative).<sup>4</sup> The trauma narratives greatly differed in length, the shortest narrative had one page and the longest had 23 pages.

## Measures

Posttraumatic stress reactions over the previous month were measured using the UCLA PTSD Reaction Index (PTSD-RI; Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998; Steinberg, Brymer, Decker, & Pynoos 2004). The PTSD-RI is a 20-item scale in which responses are recorded on a 5-point scale, ranging from 0 (*never*) to 4 (*most of the time*). Three items have two alternative formulations, and the highest score is applied to calculate the total score. Hence, 17 items make up the total symptom scale score, corresponding to the *Diagnostic and Statistical Manual of Mental Disorders* PTSD criteria, 4th ed. (*DSM-IV*). Five items describe re-experiencing, seven items describe avoidance, and five items describe increased arousal.

Depression and anxiety was measured by eight items from the Hopkins Symptom Checklist (HSCL-8). On a 4-point scale ranging from 1 (*not at all*) to 4 (*extremely*), participants indicated to what extent they had experienced various depression and anxiety symptoms in the course of the previous 2 weeks.

Separation anxiety was measured by three items from the Screen for Child Anxiety Related Disorders (Birmaher, Khetarpal, Cully, Brent, & McKenzie, 1995). On a 3-point scale ranging from 0 (*not true or hardly ever true*) to 2 (*very true or often true*) participants

indicated to what extent they experienced specific separation anxiety symptoms in the course of the previous 3 months.

## Interpretative Phenomenological Analysis

Petra Filkuková read all narratives once to get an overview of various peritraumatic reactions. In this process, she marked themes that emerged as salient and recurring, in line with the principles of interpretative phenomenological analysis (IPA; Smith & Osborn, 2008). IPA is concerned with an individual's perceptions of an event, while acknowledging that the researcher also plays part in the interpretation process, by "trying to make sense of the participants trying to make sense of their world" (Smith & Osborn, 2008, p. 53). In the interviews, participants described known conditions associated with life-threatening situations such as fear, despair, thumping heart, fast breathing, emotional numbness, changes in time perception, absence of pain during injuries, stupor, panic, and chaotic action. Some of them reported seeing their entire life as in a movie and having incomplete memory or amnesia for the most dramatic parts of their experience (such as when they were shot at or when they saw dead bodies).

A peculiar sign of their trauma experience, which did not receive much attention in trauma literature, was a fear of nondangerous stimuli, which we called "extended fear." The term *extended fear* refers to both (a) extension of fear in width across various stimuli (not only the perpetrator but also rescuers were perceived as threatening) and (b) extension of fear in time (participants were scared also immediately after the traumatic situation; e.g., in a hospital or at survivors' gathering place). However, it should be noted that the so-called nondangerous stimuli were objectively nondangerous, but subjectively could have been perceived as ambiguous, as at a given time survivors could not know for sure that more terrorists were not involved and that more attacks would not follow. The issue of fear of nondangerous stimuli in peritraumatic situations was not expected to be found in advance and emerged as a recurrent topic during thorough reading of the interviews. Given that the phenomenon was widespread among our respondents and at the same time novel when it comes to literature on peritraumatic reactions, we decided to investigate the topic in depth. In the interviews, Petra Filkuková and Gertrud Sofie Hafstad identified passages with descriptions of extended fear and coded them in the program for qualitative data analysis NVivo, the interrater reliability was 93%.<sup>5</sup> The differences in the coders' interpretations were discussed on joint meetings with Tine K. Jensen and the final rating is based on consensus. After identifying all the relevant passages, we created subcategories of extended fear and finally quantified our findings.

<sup>2</sup> After the participants finished the trauma narrative, they were asked three supplemental questions: (a) the worst part of their experience, (b) what they thought or said to themselves during the terrorist attack to feel better, and (c) whether they think that they should have done something otherwise. Answers to these three separate questions are not included in the analysis, but the information they carry was often spontaneously mentioned already in the trauma narrative.

<sup>3</sup> The age of the remaining participants was diverse, with 3.9% participants aged 26–30, 2.1% aged 31–40, 0.6% aged 41–50, and 0.3% aged 51–60.

<sup>4</sup> In Times New Roman 12, paragraph 1.5, with minimum distances between separate interviews.

<sup>5</sup> The differences concerned especially citations where the topic of extended fear was mentioned only briefly.

## Statistical Analysis

Based on the qualitative analyses of the narratives, the sample was divided into two groups: those who reported an extended fear during and immediately after the attack and those who did not. The groups were compared using two-tailed *t* tests with regard to level of posttraumatic stress symptoms and symptoms of anxiety and depression assessed 4 to 5 months after the terrorist attack. All statistical analyses were performed in SPSS version 19.0.

## Results

### Themes of Extended Fear

Based on the trauma narratives, we identified 160 participants (54.1% of the sample) who experienced extended fear. In line with [Bovin and Marx \(2011\)](#) and [Scherer \(2009\)](#), we also see preceding cognitions (appraisal of threat) as a part of the emotional experience (fear), together with subsequent action tendencies (avoidance of stimuli perceived as dangerous).

A more detailed analysis revealed that extended fear was directed toward various people and places participants encountered during and immediately after the terrorist attack. More specifically, in addition to the terrorist, participants on the island saw (a) their peers, (b) rescuers' boats, (c) policemen, (d) news helicopter, and (e) people on mainland. Once they were rescued and reached mainland, each of the survivors entered (f) some mean of transport (bus, taxi, private car, ambulance, ambulance helicopter) to be carried either to (g) survivors' gathering place in a nearby hotel or (h) a hospital.

Each of these eight incoming nondangerous stimuli was appraised. Whereas 45.9% of participants appraised all of these stimuli positively and were relieved when they saw signs of help, 54.1% of participants evaluated at least one of these eight stimuli as a new threat. In line with models by [Bovin and Marx \(2011\)](#) and [Scherer \(2009\)](#), the threat appraisal was continuously checked and updated. However, the time until the threat appraisal was corrected differed greatly. Whereas in case of fear of rescuers' boats and policemen the correction followed within seconds to maximum an hour, the extended fear of being killed at the rescuers' gathering place or in hospital lasted much longer, from several hours to days.

Each participant's free description of the event was followed by a question from the interviewer about the worst moment of the whole experience. Some participants reported that the encounter with rescuers (police, volunteers on boats) and the stay at the survivors' gathering place in a hotel were among the most threatening moments they experienced on the day of the attack.

A minority of respondents did not finish the interview at the point when they got home, but also talked about what they experienced in the following months. Some of them (5.4% of the total sample) described fear triggered by later situations such as visiting the capital; seeing policemen or ticket inspectors; hearing a helicopter, a fire alarm, screams on the playground, or the crack of a toy balloon; or being at airport, at a shopping mall, or in a crowd. These are already recognized as trauma reminders in the literature (e.g., [Scrimin et al., 2011](#)) and participants were categorized into the "extended fear" group only in cases where they simultaneously described pretraumatic fear of nondangerous stimuli.

In the following section we will describe each of the eight main categories of fears and each category will be illustrated by one short citation (some long citations covered more than one page of the transcript). The frequency of each of these categories is presented in [Table 1](#).

**Boats.** Volunteers on boats were the first ones who approached the crime scene to help. They circled around the island and took on board those who had decided to swim a long distance in cold water. Some of the volunteers also approached the island and encouraged survivors to leave their hiding places and swim to the boats. The terrorist repeatedly shot at the boats, but no one on the boats was killed.

The participants who had fear of boats (28.7% of the sample) thought that the terrorist was using a boat to shoot swimmers and those who were hiding along the water under steep cliffs. Some of them supposed that a new group of terrorists was approaching on boats. When they saw volunteers using binoculars to spot survivors or locate the terrorist, they thought they were seeing a gun. When they heard shots being fired at the boats, they interpreted it as hearing shots being fired from the boats toward them. Some of the participants even clearly (yet mistakenly) remembered seeing people on boats shooting and killing swimmers.

As a result of their fear of boats, participants did not leave the island in order to reach rescuers. Some swimmers turned away from the boats, even at the cost of moving farther from land. Some of the participants also laid themselves flat on water and pretended that they were already dead so that the boats would lose interest in them. In cases where the boat reached them despite their efforts to escape and forced them to get onboard, some participants still expected that the people on boats were going to kill them at a later stage.

So we started to hear . . . started to hear boats, and when we heard boats coming, then we heard a lot of shooting. Lots of shooting. And then I was certain that . . . we still thought that there were more of them, that they had found a boat and were driving the boat around the island and shooting people. So we pressed ourselves as far into a crack in the mountain as we could. And then . . . we did not say a word . . . we did not dare say anything. (Boy, 16 years)

**Police.** When police finally arrived to the island after 1.5 hours, not everyone looked at them with relief. Participants who had fear of police (24.7% of the sample) tried to hide themselves

Table 1  
*Sources of Fear*

Sources of fear	Percentage of all participants <sup>a</sup>
Boats	28.7%
Police	24.7%
Helicopter	4.7%
Peers	4.4%
Mainland	5.4%
Transport to survivors' gathering place	3.7%
Survivors' gathering place (hotel)	9.8%
Hospital	3%
Other	3.4%

*Note.* Many survivors reported more than one type of extended fear.

<sup>a</sup> Not everyone was exposed to each source of fear (e.g., not everyone saw a helicopter, was in a hospital, etc.).

even more when they saw a large number of policemen spreading over the island. The skepticism toward policemen was also guided by the fact that the terrorist was disguised as a policeman. Participants obtained information about how the terrorist was dressed either directly by seeing him or indirectly via mobile communication and following news on their smartphones. The participants who feared police thought that either they were seeing a new group of terrorists disguised as policemen, or that policemen mistakenly suspected survivors of committing a crime and that is why they pursued them. Some participants also thought that there was a revolution in the country and all members of the ruling Labor party and its youth organization were therefore being killed. This interpretation was supported by the fact that the first terrorist attack on that day was a bomb outside government buildings.

When policemen saw that participants were running away from them and hiding, in some cases they interpreted it as a sign of guilt. That is why they pursued them with weapons ready, which further escalated fear of policemen among survivors.

I feel . . . well . . . I feel petrified. I feel incredibly uncertain, I feel incredibly alone, hm. Well and then, and then two police officers come toward us. I am sitting and repeating all the time: "Please say you are real policemen, please. I can't stand this anymore, I can't take this anymore." Hm. They say over and over again that they are real, that I am safe, but, hm, I do not have the same . . . I do not feel like I am safe. I am sitting and constantly thinking that they . . . that they will suddenly shoot me, keep on with the killing or something like that. (Girl, 17 years)

**Helicopter.** The news helicopter reached Utøya Island earlier than police. Some participants perceived the helicopter circling above the island as suspicious and thought that it was part of the terrorist attack. The helicopter was especially frightening for swimmers, as they had no means of hiding from an air attack.

First came the helicopters. Then I said: "Don't wave. Imagine if they want to kill us. Just don't wave, lie totally still." We were lying still when they came, we did not want to wave at them, get their attention. (Girl, 17 years)

**Peers.** A minority of survivors expressed having experienced extended fear toward their peers on Utøya Island. This fear was in most cases directed toward non-Norwegians, as the bomb at the Government quarter earlier that day was in the media first attributed to non-Norwegians. Behavior of non-Norwegian adolescents was interpreted suspiciously, especially in situations when they did not express fear and did not hide. Because of the language barrier, non-Norwegians did not realize the seriousness of the event until later.

A group of three young boys arrived whom I was very suspicious of. They walked down to where we were and they were behaving very strangely. They sat down on the rock behind which we were hiding, and I was furious with them. I was very suspicious of them. Why were they laughing? What was this? Were they implicated in this? Would they give us away? I was actually suspicious of anyone I didn't know. I don't remember—I was kind of thinking, how well do I really know them? I had seen them before, but did they have something to do with this? (Girl, 24 years)

**Mainland.** Some participants did not dare to leave the island for fear that terrorists were awaiting swimmers who would reach

the mainland. Swimmers with this fear aimed to arrive at a place without people, even if it meant swimming a longer distance. After reaching mainland, some participants hid themselves in the forest or in camping bathrooms.

And when we came two thirds, three fourths of the way there, then we saw some people on the mainland, kind of, near the port. We were on the way there. And then we thought we don't know who they are, we can't trust them. So we didn't swim there, so that we wouldn't get shot. So we just swam kind of crooked. So we swam to some cabin where there were no people. (Boy, 18 years)

**Transport to survivors' gathering place.** After survivors reached the mainland, policemen escorted them to a nearby hotel. Buses and taxis, as well as volunteers' cars, were used for this purpose. Participants with extended fear were hesitant to board buses and cars. They thought that the driver could be a terrorist, that there might be a bomb in the bus, that the terrorist might sneak into a bus disguised as a survivor or that the bus might be attacked from outside. During the whole journey, they observed signs of suspicious behavior from the driver as well as signs of danger on the road and prepared plans for escape in case of emergency.

So I look at one of my friends, and he looks back at me. And both of us think like: "Who is driving the bus? Can we trust the driver? What should we do now?" Isn't it better to just walk, because we felt it would be safer than . . . We didn't want to just put our lives in somebody else's hands. So we boarded the bus. It was just in the backyard of this farm. And then we saw that the man driving the bus was pretty old. But we were still uncertain, so both of us were sitting kind of like . . . concentrated at the front of the bus, just in case he would start doing something strange, we would jump on him. Both of us are old enough that we have basic understanding of gas and breaks. (Boy, 17 years)

**Survivors' gathering place (hotel).** The survivors' gathering place was perceived by participants with extended fear as a perfect terrorist target. They were scared when they saw on TV that the name of the hotel where they were gathered was revealed to the public. They expected that someone would come and shoot them and panicked when they heard unexpected noises such as the sound of a moving chair or the sound of a falling object. Some feared that the terrorist had predicted where the survivors would be gathered and put a bomb in the hotel beforehand. Some were afraid that a terrorist would enter the hotel disguised as a survivor and carefully observed all survivors to check whether they had identification bracelets. They lowered the curtains so that they could not be easily shot from outside. They were afraid to be in a hotel room alone and to fall asleep. The day after the terrorist attack, the king, the queen, the prime minister, and other leading Norwegian representatives visited the hotel to show support for the survivors. This gesture caused some of the survivors to panic, as they thought that arrival of country representatives would attract the terrorist's attention to the hotel and lead to a new attack.

Hmm, and when I finish showering, and open the door to my hotel room . . . everything is totally silent and I think: Oh my God, people have been murdered, everyone in the hotel is dead and I am the only person left alive. I can't open the door because they are standing outside and will shoot me with a pistol . . . in my mind I see them standing outside the door with a pistol ready to shoot me. (Boy, 16 years)

**Hospital.** A large number of those who were hospitalized exhibited extended fear while in the hospital. Specifically, they suspected doctors and nurses of being the terrorist's allies and having malicious intentions. Some feared being alone in a hospital room; one participant feared a bomb attack on the hospital.

And here also it was . . . the fear was there for a long time in the hospital. I would lie there . . . thinking: "Is this person his accomplice?" Then I would think: "No, if that were the case then he would have already killed me." If this nurse had been . . . like . . . part of the plan . . . And I had these same thoughts many times with many different nurses. (Girl, 19 years)

**Other types of fear.** The eight above-mentioned categories did not cover all types of extended fear among survivors. In this miscellaneous category, many of the fears were related to mobile phones. Participants who called emergency numbers for help did not want to report their exact location because they feared that they might be speaking with the terrorist's allies. Some turned off their mobile phones altogether for fear that the terrorist was tracking them using the signals from their mobile phones. Some survivors received calls from unknown numbers (police, media) during the terrorist attack, but there were rumors that picking up a call from an unknown number would result in being found by the terrorist. One participant tried to destroy all evidence that she had ever been on the island, as she thought that everyone who was on the island would be tracked and eventually killed.

Hmm, we ran down to the beach called Bolsjevika and when I got there, I flung off my jacket and boots on the beach and threw away my purse. And then I realized that I had a passport in the purse and I thought that I did not want anyone to know that I had been there because this was so major. That was important for me. I understood that someone wanted to kill me and I had to . . . It was like being in a movie . . . I had to escape, nobody could know that I had been there. So I threw my purse into the lake, so that my passport would be destroyed, together with my cell phone, which I had turned off. (Girl, 24 years)

### Analysis of Group Differences

Given that the qualitative part of the analysis covered all interviews with participants under the age of 26, we obtained a large enough sample to investigate whether there are any quantitative differences between participants with and without extended fear. The participants with extended fear scored significantly higher on the PTSD sum score,  $t(294) = -4.23$ ,  $p < .001$ , re-experiencing (B-symptoms in PTSD scale),  $t(294) = 2.95$ ,  $p < .001$ , depression and anxiety,  $t(294) = -2.87$ ,  $p = .004$  and separation anxiety,  $t(294) = -2.46$ ,  $p = .014$  (see Table 2).

Similarly, as in many other studies, women in our sample also reached significantly higher scores of posttraumatic stress symptoms than men,  $t(294) = 5.37$ ,  $p < .001$ . Consequently, there had to necessarily be more women than men in the sample of participants with extended fear which reached higher symptom levels,  $\chi^2(1) = 9.43$ ,  $p = .002$ . However, when we look at women and men separately, we find similar pattern of results for both genders (see Table 2).

Table 2  
Comparison of Survivors With and Without Extended Fear

	Extended fear, $n = 160$ (54.1%) $M (SD)$	Without extended fear, $n = 136$ (45.9%) $M (SD)$	$p$
PTSD total score	29.32 (11.55)	23.39 (12.36)	<.001
Men	25.29 (11.73)	21.61 (11.82)	.057
Women	32.56 (11.81)	26.19 (10.86)	.002
Re-experiencing (B-symptoms; $M$ )	1.73 (.95)	1.18 (.85)	<.001
Separation anxiety ( $M$ )	.50 (.54)	.36 (.48)	.014
Depression and anxiety ( $M$ )	2.17 (.68)	1.95 (.62)	.004

### Discussion

In the vast amount of information in the trauma narratives, we observed an interesting phenomenon that has not yet been thoroughly described in the trauma literature. Descriptions of "extended fear," referring to fear of nondangerous stimuli during and immediately after the terrorist attack, were present in 54.1% of the participants' narratives. Participants with extended fear had significantly higher levels of posttraumatic stress symptoms, symptoms of depression and anxiety, and separation anxiety 5 months after the attack than participants who did not mention extended fear in their narratives.

The literature seems to primarily discuss enhanced fear in the period after the traumatic event, which can also spread to stimuli only remotely related to the initial trauma. By process of classical conditioning and stimulus generalization, rape victims may experience fear and anxiety for instance when they see a man with similar features to the rapist or when they encounter a location that has some resemblance to the crime scene (Kilpatrick, Veronen, & Resick, 1982). It is possible that a similar mechanism was involved also in the development of extended fear during the peritraumatic situation. The vast majority of the survivors knew already during the peritraumatic situation that (a) the terrorist was disguised as policeman and (b) the terrorist attack on Utøya Island was preceded by a bomb which exploded in the capital. By process of conditioning and stimulus generalization, some participants thus might have developed fear toward anyone who presented themselves as authority or help. In addition, the survivors might have learnt that when it seems that the danger is over (bomb in Oslo exploded) and it is time to count losses, a new terrorist attack comes.<sup>6</sup> Therefore, they did not have a feeling of safety after being rescued and kept analyzing possible new threats. However, it still remains unclear why some participants reacted with extended fear while others felt immediately relieved when they saw signs of help.

There are several possible explanations as to why experiencing extended fear in a peritraumatic situation was related to symptom-

<sup>6</sup> A twist from seeming safety to a new danger is a part of standard plots in thrillers and horror movies. Surprisingly many participants spontaneously mentioned in their trauma narratives that they felt like in a movie (see example "Other types of fear") and some even chose strategies which they reportedly learnt from movies (e.g., lying on the ground during shooting). It seems that when one does not have a script of any similar situation in one's own history, movies serve as a reference point.

atology 5 months later. One possible explanation is that experiencing extended fear was a very early sign of symptomatology which developed after the traumatic event.

A second explanation refers to the notion that there may be individual differences in how the event was appraised. Although individuals were confronted with the same stimuli (e.g., boats), they interpreted them differently (threat vs. help). As a result, for participants who perceived nondangerous stimuli as threatening, the terrorist attack appeared to be even more extensive than it actually was. Consequently, they might have been even more frightened during the traumatic event than those who interpreted the attack as less extensive. This interpretation would be in line with the Ehlers and Clark's (2000) theory, according to which cognitive processing during trauma affects PTSD.

A third possibility is that the survivors' psychological state during the interview may have affected either their recall of the events or their reports of what they had experienced. In previous research, memories of highly traumatic events have been found to be subject to changes over time (Southwick, Morgan, Nicolaou, & Charney, 1997). A study of a nontraumatized college population revealed that participants scoring high on introversion and neuroticism rated their emotionality in retrospect more negatively than was actually the case on the respective day in the past; the opposite pattern emerged for extraverts (Barrett, 1997). Moreover, current emotional state may affect the way we remember or choose to talk about experiences from the past. It is thus possible that individuals who were in a worse psychological state at the time of the interview or who had a certain type of personality remembered more negative elements of the trauma, including experiencing extended fear.

However, it is unclear whether the memory of the event could have changed so much within 4–5 months that the participants would report being relieved while seeing boats while in fact they had been frightened, or vice versa. Studies on trauma memories conclude that subjective memory of a traumatic event has a greater impact on one's psychological health than an exact description of what really happened because the real and accurate version of the event is no longer available in one's memory (Rubin, Berntsen, & Bohni, 2008; Southwick et al., 1997). The issue of how accurately participants are capable of reporting their feelings and reactions in hindsight is common for the majority of studies on peritraumatic reactions, as interviewing victims immediately after the trauma is allowed only in some countries and feasible for only certain types of traumas (excluding terrorist attacks).

The fourth possibility is that participants with certain personality traits (e.g., anxiousness, pessimism) were more vulnerable and had an increased tendency to both experience extended fear during the trauma and develop symptomatology afterward. In light of this possibility, having predisaster data on personality would have strengthened the study's design. Unfortunately, we did not have such data, a caveat this study has in common with most disaster research due to the sudden and unexpected nature of the events we study. Therefore, we are not able to determine whether personality may have been an underlying cause of the association between peritraumatic experience of extended fear and later symptomatology.

These four possible explanations for the relationship between extended fear and later symptomatology are not entirely mutually exclusive and can interact. Whether extended fear was caused by interpretation of the event, personality, or memory bias, the current

memory of feeling threatened by a wide range of stimuli during the terrorist attack may cause by the process of classical conditioning a wide range of stimuli in participants' environment to serve as trauma-reminders and trigger re-experiencing of the event. Subsequent avoidance of these stimuli hinders the extinction of the link between the stimuli and negative emotional experience they cause.

Extended fear prevented some participants from swimming away from the island because they believed that they would be shot by terrorists on boats, in a helicopter, or waiting on the mainland. However, it should not be overlooked that extended fear had an adaptive element too: Participants with extended fear had a lower probability of being lured out from their hiding places by the terrorist, who presented himself as a policeman. Hence, the reaction of extended fear should not be perceived as clearly maladaptive, as interpretation of a wide range of ambiguous stimuli as threatening can in fact in certain situations save one's life.

For future studies it would be worthwhile to investigate the relationship between extended fear and acute stress reactions; unfortunately we did not have data available to explore this topic.

It would be also interesting to explore whether participants with extended fear subsequently face more trauma reminders than participants without this type of fear. The fact that participants with extended fear score significantly higher on re-experiencing symptoms could mean that they react on a wider array of triggering stimuli. However, we unfortunately do not have data on which specific stimuli triggered re-experiencing in the participants. Are survivors who perceived the helicopter as a new threat more likely to be reminded of the trauma when they see helicopters compared to those who interpreted the helicopter above Utøya Island as a sign of help? Are survivors with extended fear who distrusted policemen, medical personnel and volunteers during the peritraumatic situation also more skeptical toward good intentions of strangers since the attack? If that is the case, the selection of the sample of participants may not be entirely representative of the survivor population. More specifically, it is possible that some survivors with extended fear decided not to participate in the study because they found the letter and subsequent phone call requesting a face-to-face interview in relation to the terrorist attack threatening. They might have been afraid that participating in the study could allow them to be tracked by potential allies of the terrorist or the terrorist himself once he would be released from prison.

It is a topic for future investigation whether the phenomenon of extended fear is specific only to the Utøya terrorist attack or whether it applies to other contexts as well. The terrorist attack on Utøya Island was unique in the way that the perpetrator presented himself as a policeman. However, there are many other traumatic situations in which victims might experience someone unexpectedly turning out to be someone else: a copassenger becomes a terrorist, a driver of a car passing nearby turns out to be a kidnapper, a friend becomes a rapist, a classmate changes into a mass shooter, or a person ringing the doorbell with a charity promotion turns out to be a robber. Hence it is possible that extended fear may also develop immediately in these cases. If so, victims exhibiting irrational distrust of others should be given special attention in order to prevent later psychological problems.

Knowledge of the phenomenon of extended fear could help police and medical personnel understand survivors' unexpected reactions in similar situations in the future. It may be useful for police to know that not only perpetrators but also heavily traumatized victims may have a

tendency to run and hide from police. Medical personnel should be aware that traumatized individuals can interpret various neutral stimuli as threatening, and hospitals should provide survivors with the opportunity to remain as much as possible surrounded by their family and friends whose presence makes them feel safe.

All in all, our findings highlight the importance of studying trauma narratives. Peritraumatic reactions cannot be fully understood when participants only rate their negative emotions and physiological reactions during the traumatic event on predefined scales. Peritraumatic psychological processes are very rich and complex, with large individual variations, and can be related to symptomatology, which develops in the months subsequent to the initial trauma. Thorough study of trauma narratives may reveal little-described phenomena, such as extended fear. Our study also generally highlights the importance of peritraumatic reactions, which have been downplayed in the *DSM-5* compared to the *DSM-IV*.

## References

- Barrett, L. F. (1997). The relationships among momentary emotion experiences, personality descriptions, and retrospective ratings of emotion. *Personality and Social Psychology Bulletin*, *23*, 1100–1110. <http://dx.doi.org/10.1177/01461672972310010>
- Bedard-Gilligan, M., & Zoellner, L. A. (2008). The utility of the A1 and A2 criteria in the diagnosis of PTSD. *Behaviour Research and Therapy*, *46*, 1062–1069. <http://dx.doi.org/10.1016/j.brat.2008.06.009>
- Bernat, J. A., Ronfeldt, H. M., Calhoun, K. S., & Arias, I. (1998). Prevalence of traumatic events and peritraumatic predictors of posttraumatic stress symptoms in a nonclinical sample of college students. *Journal of Traumatic Stress*, *11*, 645–664. <http://dx.doi.org/10.1023/A:1024485130934>
- Birmaher, B., Khetarpal, S., Cully, M., Brent, D., & McKenzie, S. (1995, October). *Screen for Child Anxiety Related Disorders (SCARED): Child Version*. Retrieved from <http://psychiatry.pitt.edu/sites/default/files/Documents/assessments/SCARED%20Child.pdf>
- Bovin, M. J., & Marx, B. P. (2011). The importance of the peritraumatic experience in defining traumatic stress. *Psychological Bulletin*, *137*, 47–67. <http://dx.doi.org/10.1037/a0021353>
- Brewin, C. R., Andrews, B., & Rose, S. (2000). Fear, helplessness, and horror in posttraumatic stress disorder: Investigating *DSM-IV* criterion A2 in victims of violent crime. *Journal of Traumatic Stress*, *13*, 499–509. <http://dx.doi.org/10.1023/A:1007741526169>
- Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, *103*, 670–686. <http://dx.doi.org/10.1037/0033-295X.103.4.670>
- Brunet, A., Weiss, D. S., Metzler, T. J., Best, S. R., Neylan, T. C., Rogers, C., . . . Marmar, C. R. (2001). The Peritraumatic Distress Inventory: A proposed measure of PTSD criterion A2. *The American Journal of Psychiatry*, *158*, 1480–1485. <http://dx.doi.org/10.1176/appi.ajp.158.9.1480>
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*, 319–345. [http://dx.doi.org/10.1016/S0005-7967\(99\)00123-0](http://dx.doi.org/10.1016/S0005-7967(99)00123-0)
- Ehlers, A., Mayou, R. A., & Bryant, B. (1998). Psychological predictors of chronic posttraumatic stress disorder after motor vehicle accidents. *Journal of Abnormal Psychology*, *107*, 508–519. <http://dx.doi.org/10.1037/0021-843X.107.3.508>
- Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, *99*, 20–35. <http://dx.doi.org/10.1037/0033-2909.99.1.20>
- Halligan, S. L., Michael, T., Clark, D. M., & Ehlers, A. (2003). Posttraumatic stress disorder following assault: The role of cognitive processing, trauma memory, and appraisals. *Journal of Consulting and Clinical Psychology*, *71*, 419–431. <http://dx.doi.org/10.1037/0022-006X.71.3.419>
- Kaysen, D., Rosen, G., Bowman, M., & Resick, P. A. (2010). Duration of exposure and the dose-response model of PTSD. *Journal of Interpersonal Violence*, *25*, 63–74. <http://dx.doi.org/10.1177/0886260508329131>
- Kilpatrick, D. G., Veronen, L. J., & Resick, P. A. (1982). Psychological sequelae to rape. In D. M. Doleys, R. L. Meredith, & A. R. Ciminero (Eds.), *Behavioral medicine: Assessment and treatment strategies* (pp. 473–497). New York: Plenum Press. [http://dx.doi.org/10.1007/978-1-4684-4070-6\\_19](http://dx.doi.org/10.1007/978-1-4684-4070-6_19)
- King, D. W., King, L. A., Gudanowski, D. M., & Vreven, D. L. (1995). Alternative representations of war zone stressors: Relationships to posttraumatic stress disorder in male and female Vietnam veterans. *Journal of Abnormal Psychology*, *104*, 184–196. <http://dx.doi.org/10.1037/0021-843X.104.1.184>
- O’Kearney, R., & Perrott, K. (2006). Trauma narratives in posttraumatic stress disorder: A review. *Journal of Traumatic Stress*, *19*, 81–93. <http://dx.doi.org/10.1002/jts.20099>
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, *129*, 52–73. <http://dx.doi.org/10.1037/0033-2909.129.1.52>
- Ozer, E. J., & Weiss, D. S. (2004). Who develops posttraumatic stress disorder? *Current Directions in Psychological Science*, *13*, 169–172. <http://dx.doi.org/10.1111/j.0963-7214.2004.00300.x>
- Pynoos, R. S., Rodriguez, N., Steinberg, A. M., Stuber, M., & Frederick, C. (1998). *PTSD Index for DSM-IV*. Los Angeles, CA: UCLA Trauma Psychiatry Service.
- Rubin, D. C., Berntsen, D., & Bohni, M. K. (2008). A memory-based model of posttraumatic stress disorder: Evaluating basic assumptions underlying the PTSD diagnosis. *Psychological Review*, *115*, 985–1011. <http://dx.doi.org/10.1037/a0013397>
- Scherer, K. R. (2009). The dynamic architecture of emotion: Evidence for the component process model. *Cognition and Emotion*, *23*, 1307–1351. <http://dx.doi.org/10.1080/02699930902928969>
- Scrimin, S., Moscardino, U., Capello, F., Altoè, G., Steinberg, A. M., & Pynoos, R. S. (2011). Trauma reminders and PTSD symptoms in children three years after a terrorist attack in Beslan. *Social Science & Medicine*, *72*, 694–700. <http://dx.doi.org/10.1016/j.socscimed.2010.11.030>
- Smith, J. A., & Osborn, M. (2008). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* (2nd ed., pp. 53–80). London: Sage.
- Southwick, S. M., Morgan, C. A., III, Nicolaou, A. L., & Charney, D. S. (1997). Consistency of memory for combat-related traumatic events in veterans of Operation Desert Storm. *The American Journal of Psychiatry*, *154*, 173–177. <http://dx.doi.org/10.1176/ajp.154.2.173>
- Steinberg, A. M., Brymer, M. J., Decker, K. B., & Pynoos, R. S. (2004). The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. *Current Psychiatry Reports*, *6*, 96–100. <http://dx.doi.org/10.1007/s11920-004-0048-2>

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