

## Abstract

Self-reported positive change in the aftermath of trauma has been the focus of numerous studies, and the literature regarding posttraumatic growth (PTG, positive change resulting from the struggle with trauma) has grown meaningfully in the last decade. However, limited research has described behaviors associated with these positive changes, or documented reports of such changes by people in the survivor's immediate social network. We sought to extend the extant research by exploring caregivers' observed positive changes in youth and emerging adults exposed to a terrorist attack and detailing the nature of these changes. As part of a large-scale, longitudinal study of survivors of the terrorist attack at Norway's Utøya Island, 284 caregivers (62.3% females,  $M$  age=47.23 years,  $SD$ =5.79) were asked whether they had observed any positive changes in their youth 2.5 years post-terror and, if so, if they could provide examples of these changes from their daily life. Caregivers' statements were systematically coded and analyzed using thematic analysis. Most caregivers (64%) reported that they had observed positive post-trauma changes in their youth, and the dimensions described largely align with findings from the existing PTG literature. The caregivers most commonly described relational and personal changes in their children, including a stronger bond with family (e.g., more expressed affection); heightened compassion (e.g., greater interpersonal sensitivity); and greater maturity (e.g., increased reflectiveness). These findings suggest that PTG is an observable phenomenon among youth and emerging adults exposed to terror, and the rich examples of positive behavioral changes support the validity of the PTG construct.

**Key words:** Posttraumatic growth, trauma, terrorism, youth, caregivers

Since the mid-1990s, researchers have documented individuals' reports of positive personal changes in the aftermath of natural disasters, terrorism, terminal illness, physical and sexual assault, and other potentially traumatizing experiences (Calhoun & Tedeschi, 2006; Linley & Joseph, 2004). In the literature, this phenomenon has most commonly been referred to as *posttraumatic growth* (PTG), defined as: "positive change that an individual experiences as a result of the struggle with a traumatic event" (Calhoun & Tedeschi, 1999, p.11). PTG refers to potential positive "side effects" of dealing with trauma and its aftermath, not positive consequences stemming from the trauma itself.

This positive post-trauma change can manifest in multiple ways, but Tedeschi and Calhoun (1995; also see Calhoun & Tedeschi, 2006) found that they cohered in three main domains: perceptions of self (e.g., increased personal strength and self-reliance), interpersonal relationships (e.g., greater self-disclosure and emotional expressiveness), and philosophy of life (e.g., greater life meaning, sense of new possibilities; spiritual growth). These domains have consistently been replicated in the literature on PTG, in both quantitative and qualitative studies. Given the pronounced variability in approach across studies – including in methodology, sample, the nature of the trauma experienced, time since trauma, and other factors – the current research base includes a wide range of reports about the prevalence of PTG, from 3% in a sample of adults coping with the loss of a family member (Davis, Nolen-Hoeksema, & Larson, 1998) to 98% in a sample of women with breast cancer (Weiss, 2002; for a review, see Linley & Joseph, 2004). To our knowledge, although researchers (e.g., Hafstad, Kilmer, & Gil-Rivas, 2011; Kilmer et al., 2014), have pointed to the degree to which culture and context can influence the nature of the growth reported, only Shakespeare-Finch and Armstrong (2010) have investigated prevalence differences in the dimensions of growth across trauma types. They found that, compared to survivors of sexual abuse and motor vehicle accidents, bereaved adults reported significantly higher levels of growth in their appreciation of life and in relating to others. This work, consistent with the bulk of PTG research, involved reports of growth among adults.

Positive post-trauma changes have been reported by young people exposed to various types of trauma, including terror events (Laufer, Raz-Hamama, Levine, & Solomon, 2009; Levine, Laufer, Hamama - Raz, Stein, & Solomon, 2008), traffic accidents (Salter & Stallard, 2004), natural disasters (e.g., Cryder, Kilmer, Tedeschi, & Calhoun, 2006), and one or more of a range of various potentially traumatizing events (Alisic, Van Der Schoot, Van Ginkel, & Kleber, 2008; Glad, Jensen, Holt, & Ormhaug, 2013; Hafstad et al., 2011). Of salience, in addition to reports of PTG emerging following diverse potentially traumatic events and experiences, such changes have been reported by youth across cultural contexts – including the United States, Norway, the Netherlands, Chile, Israel, China, Japan, and others – as well (Alisic et al., 2008; Andrades, García, Reyes-Reyes, Martínez-Arias, & Calonge, 2016; Glad et al., 2013; Hafstad et al., 2011; Kimhi, Eshel, Zysberg, & Hantman, 2009; Laufer et al., 2009; Laufer & Solomon, 2006; Yu et al., 2010).

Though most qualitative studies on PTG among young trauma survivors have used adult survivors of childhood trauma, three studies have examined PTG qualitatively among youth (Glad et al., 2013; Hafstad et al., 2011; Salter & Stallard, 2004). The forms of PTG reported in these studies are largely in line with findings from quantitative studies on adults, but the efforts involving youth have identified two additional sub-themes: maturity/wisdom (Glad et al., 2013; Hafstad, 2009) and a desire to help/protect others (Glad et al., 2013).

Despite the substantial body of research that has accumulated over the last two decades, questions remain about how to best conceptualize, understand, and assess positive post-trauma change. To date, most studies on PTG have employed self-report measures, such as the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) and the child- and youth-focused versions of this measure (PTGI-C; Kilmer et al., 2009). This (over)reliance on self-report data has led some to question the validity of the PTG construct (e.g., Blackie, Jayawickreme, Helzer, Forgeard, & Roepke, 2015; Frazier, Coyne, & Tennen, 2014), and some researchers and theorists have argued that PTG may be illusory or that it may simply reflect survivors' coping mechanisms (Frazier et al., 2009; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). According to Helgeson (2010), corroborating observational reports from individuals close to the trauma survivors would increase confidence in the validity of self-reported PTG. In the extant set of studies on significant others' (spouse/friends/relatives) perceptions of PTG among trauma survivors, significant others' ratings have been compared to the trauma survivors' own reports of PTG. The findings largely suggest alignment in the sources' ratings; that is, significant others' responses corroborate survivors' self-reported PTG (Blackie et al., 2015; Helgeson, 2010; McMillen & Cook, 2003; Moore et al., 2011; Park, Cohen, & Murch, 1996; Shakespeare - Finch & Barrington, 2012; Shakespeare - Finch & Enders, 2008; Tallman, Lohnberg, Yamada, Halfdanarson, & Altmaier, 2014; Weiss, 2002). These studies have focused on growth among adults who have experienced trauma. We are not aware of observation-focused or corroborating reports of growth from parents or caregivers following youths' experiences of trauma and its aftermath.

According to Tedeschi, Park, and Calhoun (1998, p.3), PTG is "a significant beneficial change in cognitive and emotional life that may have behavioral implications". Some have gone further, arguing that 'true growth' (as opposed to perceived growth) is accompanied by behavioral change (e.g., Hobfoll et al., 2007). Consistent with this perspective, others have argued that those who grow in the aftermath of a trauma probably

will display measurable behavioral changes (e.g., Frazier et al., 2014; Jayawickreme & Blackie, 2014), and that documenting such change would enhance views regarding the veracity of the PTG concept (Zoellner & Maercker, 2006). Nevertheless, despite the sizable literature focusing on positive post-trauma changes, it appears that only one study has provided qualitative examples of observable positive behavioral changes post-trauma (i.e., Shakespeare - Finch & Barrington, 2012). In that work, the authors sought to explore PTG-related behavioral changes as reported by the survivors themselves and their significant others, using the PTGI and five open-ended questions. Shakespeare-Finch and Barrington found that almost all survivors reported positive behavioral changes post-trauma, most notably positive relationship changes and a newfound appreciation of life, and these changes were corroborated by their significant others. However, published reports of their results predominantly reflect examples of the survivors' own descriptions of their positive behavior change, not those provided by their significant others.

Whereas quantitative research can profitably (and efficiently) be used to assess the presence and nature of positive post-trauma change (as well as post-trauma symptoms, individual resources, and associations among relevant constructs and factors), some researchers have noted the potential benefits of qualitative work to illuminate developmental differences across children and youth (and adults), enhance understanding of youths' experiences, and guide refinements to subsequent assessments of PTG (e.g., Devine, Reed-Knight, Loiselle, Fenton, & Blount, 2010). Indeed, qualitative studies have the potential to capture rich, subjective descriptions of the phenomenon and to identify new, salient themes of PTG (Devine et al., 2010; Kilmer et al., 2014; Massey, Cameron, Ouellette, & Fine, 1998). By analyzing narratives of positive post-traumatic change, it is possible to explore how individuals describe growth, whether in themselves or someone else, in their own words, unconstrained by a circumscribed set of items or by preconceived notions about how such changes are conceptualized and operationalized (e.g., Massey et al., 1998; Pals & McAdams, 2004). Based on the present review, no large-scale study to date has systematically explored whether, or in what form, significant others perceive positive changes in survivors of a terrorist attack. Furthermore, in the existing studies in which significant others have been asked about positive personal changes in trauma survivors, none have included non-adult trauma survivors, and corroborators' answers have primarily been used to verify reports of self-perceived PTG. Thus, little is known regarding the specific behaviors that may be associated with positive post-trauma change in general, and among young survivors in particular. The caregiver-child dyad represents a unique context for investigating observable post-trauma changes, and qualitative methodologies can yield concrete examples of the type(s) of positive post-trauma changes they have noted in trauma survivors' behavior in day-to-day life.

The context for the present study is the terrorist attack on Utøya Island in Norway, on July 22, 2011. Subsequent to detonating a car bomb in Oslo, the perpetrator moved to Utøya Island, northwest of Oslo, targeting a summer camp for the Norwegian Labor Party's youth organization. Over the course of roughly 80 minutes, he shot at those he encountered, primarily adolescents and young adults; 564 people were gathered on the small island, and 68 were killed at Utøya, with another individual dying later in the hospital and many more injured (The Norwegian Directorate of Health, 2012). Survivors experienced very high levels of trauma exposure, including the intense and persistent sound of gun shots, hearing people scream in pain and fear, threats to life, and loss of someone close (Glad, Jensen, Hafstad, & Dyb, 2016). Further complicating the nature of this experience, the youths' parents were following the events as they unfolded on the news and via digital media. Although some parents were in contact with their youth by phone, others were not able to establish contact; many did not know whether or not their child was alive for a period of hours.

An earlier effort reported that, four to five months post-terror, levels of post-traumatic stress symptoms were more than six times higher in the exposed youth compared to the general population in Norway (Dyb et al., 2014). That level of symptomatology provides important foundation for the present work. That is, given the nature of the attack, and the fact that the exposed youth were unlikely to have expected or been prepared for any trauma, it is probable that they found the event distressing enough to shatter their basic assumptions or core beliefs about the world. This disruption and distress are framed as prerequisites for the cognitive processing thought to be necessary for growth (Janoff-Bulman, 1992; Tedeschi & Calhoun, 1995), as models suggest that PTG results from a ruminative process in which the survivor tries to reestablish his/her assumptive world by incorporating the trauma and its aftermath (Tedeschi & Calhoun, 1995).

Enhancing knowledge about positive post-trauma changes may contribute to a more nuanced view regarding the consequences of trauma, and reports of the degree to which these changes manifest behaviorally can lend weight to findings regarding PTG in youth and young adults, which have relied primarily on self-report. Such observational reports of positive post-trauma changes would increase confidence in the validity of the PTG construct, and personal accounts regarding such changes may provide insightful descriptions of how positive post-trauma changes unfold in everyday life.

In this descriptive study, we seek to extend the extant research by exploring the type and frequency of externally-observed positive changes reported post-trauma. More specifically, we aim to document caregivers' descriptions of observed positive changes among young survivors – that is, youth and emerging adults (Arnett,

2000) – of the attack at Utøya Island. We also sought to compare externally-observed post-trauma changes to the PTG domains reported in this area, and to explore the specific behaviors associated with each domain.

## Method

### Participants

Participants took part in wave 3 of the larger longitudinal study, conducted 30-32 months after the terrorist attack at Utøya Island in July, 2011. In total, 284 caregivers (62.3% females,  $M$  age=47.23,  $SD$ =5.79) were interviewed; they included 174 mothers, 102 fathers, five stepfathers, one stepmother, one sister, and one foster mother. They were largely of Norwegian origin (91%), and typically reported an average or above average financial situation (87.5%). The participants included 85 parental couples, 111 parents who participated without a partner, and one youth's three caregivers. The 284 caregivers represented 206 (41.6%) of the youth who survived. The survivors were youth and emerging adults, between 13- and 25-years-old at the time of the terrorist attack;  $M$  age=17.5,  $SD$ =1.6; 82.5% were age 18 and younger, and 66% < 18 years. Because the youth of interest were largely under the age of 18 (and the vast majority – 76.7% – were between 16 and 21 years of age at wave 3), and the primary respondents are their caregivers/parents, we will refer to them as “youth” for the sake of brevity.

Of the 284 caregivers interviewed for the Utøya study's third wave, 282 responded to the open-ended question about observed positive changes in their youth post-trauma. Of these, 10 stated that it was too difficult to answer the question. Another 20 caregivers did not answer the question directly. Rather, they described how their youth had changed from immediately after the attack up until the interview, not how they had changed from *before* the attack, which may be seen as reflecting a meaningfully different process, or simply coping. Thus, the results coded for this study are based on reports from 252 caregivers.

### Procedure

The present study grows out of a broader longitudinal study developed to assess posttraumatic stress reactions and potential predictors of Posttraumatic Stress Disorder (PTSD) among survivors of the attack at Utøya Island in 2011 (Dyb et al., 2014). The description that follows focuses on methods of specific relevance to the present work.

Participants were interviewed face-to-face, and the semi-structured interviews typically occurred in participants' homes, though some took place in an office in their home town or a public place chosen by the participant. Caregivers' observations of positive changes subsequent to the trauma, or PTG, were assessed using the following open-ended questions: “*After a traumatic event some people change in ways they themselves, or others, perceive as positive. Have you noticed any such changes in your youth?*”. The caregivers who confirmed that they had noticed such changes were asked: “*Can you give examples of how this has affected your child in daily life or in his/her relationship with other people? (Special things he/she does?)*”. The interviews were audio-taped and transcribed verbatim.

All interviewers attended a one-day training, which included a focus on the interview manual and an in-depth explanation of the questions and the rationale behind each topic. Caregiver interviews lasted approximately an hour and a half, with topics ranging from their mental and physical health pre-and post-trauma, to personal experiences with the media, and their children's post-trauma school performance. If interviewers identified unmet needs (e.g., for intervention or support) among the caregivers, they were instructed to arrange for assistance. The study was approved by the Regional Committee for Medical and Health Research Ethics in Norway, and participants provided written informed consent.

### Data Analysis

The caregivers' narratives of positive post-trauma change were analyzed following the principles of thematic analysis, “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p.79). To become familiar with the data and generate initial ideas, the first author (coder 1) read all interviews carefully, writing reflective notes regarding the types of changes described. As a next step, coder 1 organized the data into meaningful units, by identifying initial codes in the material based on the nature of the changes described. These codes included all discourse units in which caregivers described a positive change in their youth after the attack. This approach aligns with Boyatzis (1998, p.63) definition of codes: “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon”. Codes were identified both deductively, based on Tedeschi and Calhoun (1995) PTG model, and inductively, from the data. In parallel, the fourth author (coder 2) read the first 18 pages (10%) of the transcribed material, and marked statements she believed to be reflective of growth. The codes from the two raters were then compared. No systematic differences were identified; coder 1 had identified 34 PTG quotes; two of which coder 2 had not marked. These two quotes were discussed and mutually reconciled.

Coder 1 subsequently sorted initial codes into preliminary themes. To refine these themes, and to make sure that they were internally coherent, coder 1 re-read the statements multiple times and systematically compared the statements within each theme. Subsequently, coder 1 developed a coding scheme which included all the statements from the caregiver reports thought to reflect potential PTG (324 unique quotes). Coder 2

independently re-coded all statements into one of the three main growth themes (i.e., personal change, relational change, or changed philosophy of life). Agreement between coders was assessed, and the inter-rater reliability was high; Cohen's kappa = 0.93. Finally, the sub-themes and associated behavioral components were discussed, defined, and labeled by the author team. In this final consensus coding process, the researchers went back to the transcripts and re-read the text before making final decisions regarding codes and labels.

In the material that follows, all quotes have been translated from Norwegian to English by a professional translation agency. In addition, all statements have been anonymized – information which may identify participant caregivers or their youth has been removed or modified, including specific references to occupation and others in their social network. As an exploratory step, we applied a Pearson Chi Square test to investigate the relation between the caregivers' gender and observed PTG, using IBM SPSS statistics for Windows, version 20.0.

## Results

Of the 252 caregivers who responded to the open-ended question about PTG, 162 (64%) described one or more positive change(s) in their youth after the terrorist attack. Among the 85 parental couples, both members of 67 couples reported whether they had observed growth in their youth, with 46 (68.7%) agreeing on the presence (n=35) or absence (n=11) of PTG. A greater absolute proportion of women reported to have observed growth (62.1%) compared to men (48.6%), but the difference was not statistically significant ( $p > .05$ ).

Through our coding of the reported changes, we identified eight themes, which aligned with the three broad areas of PTG: (1) *Relational growth*, reflected in statements regarding a stronger family bond, more compassion, and a changed social style; (2) *Personal growth*, reflected in reports of greater maturity, new personal strength, and increased motivation; and (3) *Philosophy of life*, as evidenced by a new awareness of one's values or a new appreciation of life (Table 1). In the sections that follow, findings are organized according to the three broad areas of growth, with example quotes presented to reflect the identified themes and observed changes.

-----  
Table 1 about here  
-----

### Relational Growth

**Stronger family bond.** The most distinct theme in the caregivers' descriptions of relational changes in their youth post-terror, were actions signifying a stronger family bond, reported by nearly one-fifth of the caregivers in the total sample. While 10 caregivers did not elaborate further on this notion, many stated that their youth had become more affectionate, both verbally and physically. Others noted that their youth expressed a newfound appreciation of their family, that they initiated more physical and verbal interaction, and that they were more open about their feelings.

**Greater expressed affection.** Eighteen caregivers said that their youth expressed more affection post-trauma, both verbally and physically: They gave more hugs, were careful to say 'good bye' and 'drive safely' to their parents when they were going somewhere, and said 'I love you' more often. In one mother's words: "*He's very aware of the need to tell us that he loves us and stuff like that...And that's been a big surprise, because he wasn't like that before*". In a similar vein, one father stated: "*So...before it was almost unthinkable that he'd come, come home and like, give his father, his old man, a hug, but that happens quite a lot now. Yes. So I think it...like that, he's changed for the better*". Some survivors got a tattoo to represent their closest family members, which respondents interpreted as a sign of affection.

**Newfound appreciation of family.** Eleven caregivers said that their youth had expressed a newfound appreciation of their family post-terror. One father related:

...Because she's, she appreciates her family a lot more. Including us and her siblings too. And, well. That's kinda what I've noticed the most. How much she appreciates us. So now, perhaps if she took it for granted before, she doesn't anymore.

A small number of caregivers specifically said that their youth listened to and sought their advice more post-trauma, or that their youth were more likely to understand and accept the boundaries the caregivers set.

**Initiates more interaction.** Eleven caregivers observed that their youth initiated more contact and were in touch more regularly following the attack (e.g., some called home more often, others spent more time with the family and visited more often). As one mother related:

He's become more...taken up with and attentive around his family, and spending time with relatives and...yes. Wants to come along if we're going anywhere. Before that didn't matter that much, but now he's really keen to join us and...to talk with the family and, well...he's...probably feels a bit, that he's bonded more with the family.

**More openness.** Eleven caregivers said that their youth had become more open post-terror. Three did not elaborate, but seven specifically said that their youth had become more willing to share thoughts and feelings about their difficult, personal experiences and feelings. In one father's words:

Speaking as a father, her greater openness towards me has been a positive thing. She has been more willing to tell me what's upsetting her and stuff like that...She has perhaps made it easier for me to understand how she's feeling.

**More compassionate.** Greater compassion was another prevalent theme in parents' descriptions of their youth's relational changes post-trauma, reflected in their reports of a new desire and ability to help others, increased interpersonal sensitivity, and greater empathy.

**Desire and ability to help others.** Twenty-six caregivers said that their youth had expressed a desire and shown an ability to help other people post-terror. They wanted to use their experiences to help family members (such as their grandparents and siblings), friends and other survivors from Utøya, or people who were less fortunate in life. In one mother's words: "*And that was something that she said just days after Utøya...: 'Mom. What has happened is something I can use to help other people'.*" Another mother said: "*That he looked after his grandmother the way he did, for example...being able to help someone. After having experienced such complete helplessness*". Twelve parents said that their youth had helped their friends and fellow survivors post-terror. In one mother's words:

He's ever so caring towards people. That became so extremely pronounced after 22<sup>nd</sup> of July. They have an amazing connection; I can't explain it. It's like...they're there for each other night and day, calling each other on the phone, and goes travelling, and they...and it's very, 'That's how it is mom, you have to understand – I never say no to anyone'. And that's my impression from other people too, that he responds.

Other youth helped their friends by being a good listener, or by taking care of them at parties rather than drinking themselves.

Six parents described how their youth tried to help those less fortunate than themselves – for example, one would stop and talk to individuals on the street who appeared to be addicted to drugs, another was sympathetic to people experiencing homelessness, and another had joined various help organizations. Three youth had changed career paths post-terror, towards a helping or caring profession. As one example, one mother related:

He has switched to working in healthcare and at a nursing home and ideally wants to join the Médecins Sans Frontières [also known as Doctors Without Borders]. He didn't mention this kind of work before. But there's no knowing if he might have switched career path anyway.

Although discussed in the context of positive changes, it bears mention that four parents specifically said that their youth now put other people's needs before their own to such a degree that they had become concerned about their child's own welfare.

**Interpersonal sensitivity.** Twenty-nine caregivers said that their youth had shown greater interpersonal sensitivity post-terror, with the majority describing their youth as having become more observant and caring and exhibiting more concern about how other people were doing. In one father's words:

She's a caring person by nature anyway. But it's more pronounced...And there's no doubt she thinks deeply about things...before, before Utøya, I'd be nudging her, saying 'how you doing?' and so on. Now... she's obviously grown up a lot, but...the thing is she...does the same back to me. She goes 'how are you doing?'.

Eleven caregivers explicitly said that their youth had shown greater empathy post-terror. Five did not elaborate, but six parents said that their youth now, based on their experiences on Utøya, were better able to identify with and understand other people's feelings, such as when they watched the news. In one mother's words:

Empathizing with people in distress. Everything from a Norwegian Refugee Council intervention far away, to a close friend in trouble. So in that way, I'd say her emotions are raw, and she identifies more with other people's pain and sorrow somehow. I think that has intensified...after Utøya. After she had experienced so much trauma, she identifies and empathizes more readily with other people's 'traumas'. And things like war situations, refugees...she tends to relate to their terrors. She's also said so, and I've kind of noticed how she reacts to things on TV.

**Changed social style.** Some caregivers noted that their youth had changed in their social style post-terror. Roughly half described their youth as having developed stronger social ties, whereas the other half described their youth as more socially selective.

**Stronger social ties.** Thirteen caregivers said that their youth had developed stronger social ties post-terror; some had become more socially outgoing, while others were described as having a stronger social affiliation. In one mother's words: "*He takes care of his close relationships in a good way*". Another mother said:

People have told me about it too. And it could be that joining the Workers' Youth League (AUF) gave him a sense of connection with others. But that he became more outgoing in some way... But a lot of people say he seems more... Well, sort of more, he was far more quiet in a way before.

**More selective.** Twelve caregivers said that their youth had become more selective in choosing with whom and how they wanted to spend their time. According to these parents, the youth now look for 'good' people, choose friends who are not 'superficial' and do not speak negatively about others, spend time with those who are more similar to themselves, and enjoy those who give them energy rather than drain them. In one mother's words:

She has become more aware of what she spends her time on. And who she's with and who she chooses to spend time with. What it's worth spending time on. And that's a good thing... The thing is, she's ditched some friends... I suppose she's more choosy about what she gets involved in. Whether it's something she wants to get involved in, whether it has her interest, or whether it's just draining and counterproductive for her personally. So she's become more selective. And I see that as a good thing.

### **Personal growth**

**Maturity.** The most distinct theme in the caregivers' descriptions of personal changes in their youth post-terror was greater maturity, reported by almost one-third of the total sample. While 12 did not elaborate on the nature of the changes in maturity, many parents described their youth as having become more reflective. Other youth were seen as more independent and responsible, while still others had become "precocious". Some parents noted that their youth took better care of themselves post-trauma.

**Reflectiveness.** Thirty-six caregivers said that their youth had become more reflective post-terror. Some said that their youth was more insightful and that (s)he reflected more than other youth their age; others believed that their youth had gained a new, broader perspective. In one mother's words: "*She has a lot more adult thoughts and is able to get an overall perspective on things. She's wiser*". Other youth were described as more observant, and more mature in how they thought and expressed themselves. For example, one father said: "*He's better at expressing himself. More prudent in the way he speaks*". Another father stated:

She's matured enormously. I have to say I'm impressed by her; by her being so self-possessed at the age of 20, and being so reflective. It's a wake-up call to think that... I'm proud of her ability to be... but it's painful too, because I know what caused her to be like that. So, that said, she's mature well beyond her years.

**Independence and responsibility.** Twenty-five caregivers reported that their youth had become more independent and/or responsible post-terror. As described by one mother:

And independent... Takes the initiative all on her own, decides to do things, goes traveling on her own and with others, and... Yes, I think that she's freed herself... freed herself in a big way... cut the umbilical cord [laughs a little] in a good way.

These caregivers also maintained that their youth had become better at making their own decisions, and that they took more responsibility for their lives. Others stated that their youth thought more about the potential consequences of their actions, that they were more reasonable, and that they had become more able to solve personal conflicts on their own. In one mother's words: "*He's become a bit more mature. Can handle conflicts and solve them himself. That didn't happen before*".

**Precociousness.** Fourteen caregivers said that their youth had become precocious post-terror. For example, one mother related: "*Well, he became very... how to put it, precocious... Sometimes I think that... 'This is an old soul talking'*". Another mother noted: "*Firstly, she grew up suddenly... Turned into an adult, basically. In a very short time*".

**Self-care.** Ten caregivers specifically said that their youth took better care of themselves post-terror. That is, while some had always put other people's needs first or always said 'yes' to participating in social gatherings, they were now able to take better care of, and to set healthier boundaries for, themselves. As one parent noted: "*She has become more focused on herself, and on taking care of herself*". The youth were described as less indifferent towards their personal needs and, according to their caregivers, they had started to listen to their own body; they were eating healthier, made sure they got enough sleep, and sought a doctor if they were ill. In one mother's words:

Then I noticed the change that he wasn't so hesitant about seeing his doctor when he felt the need for it, and was more able to see his own needs. He's better at saying that: 'No, I can't do this; I'm done in, I have to take it easy now'. In a sense I feel that he woke up in some way and understood that 'I have to take care of my own life. I can't just drift'.

**Personal strength.** Some caregivers said they had noticed increased personal strength, describing youth as tougher and more courageous, and as evidencing a newfound confidence.

**Stronger and more courageous.** Seventeen caregivers noted that their youth had become stronger, tougher, and more courageous after the attack. For example, caregivers explained that their youth were tougher in discussions and confrontations and less afraid to voice their own opinions and stand up for what they believe in. In one father's words:

She has more opinions...Before, she was kinda one big apology for even being there, but now she's assertive enough to speak her mind. Which is really good...she dares to get involved in a discussion and she stands her own ground somehow. That wasn't there before Utøya.

Others said that their youth would compare other experiences with what happened on Utøya, saying: *"I've experienced worse; nothing can match what happened out there."* Subsequently, they had become less afraid to try new things, such as traveling abroad.

**Greater self-confidence.** Six caregivers had seen an increased self-confidence in their youth, including becoming more self-assured and appearing more relaxed and confident in social gatherings. Three parents specifically said that the positive attention their child had received after the tragedy had increased his or her feelings of self-worth. In one mother's words: *"When he saw the number of people who had written and sent greetings on his Facebook; many of whom he never thought cared about him; I think he woke up and realized that 'I'm actually worth something'"*. Another mother echoed this sentiment:

She was kinda the quiet girl nobody noticed. But after Utøya, when all the bad stuff had settled down, I could see that there was this little bright spot in that she'd never had so much attention in her life. From people around her. She's said so herself; that she's gained more self-confidence. She's more self-reliant. She has more self-esteem. So, in that way, it was actually a positive thing, among all the awful things.

**Personal motivation.** Some caregivers noted that their youth had demonstrated a new personal motivation post-terror, including a newfound tenacity in terms of reaching personal goals, as well as stronger political engagement.

**Newfound tenacity.** Nine caregivers said that their youth had shown a newfound tenacity post-terror. Some shared that their youth had expressed a determination to master the difficult situation they were in, and to not let the perpetrator and his actions impede their dreams. One mother reported her son's words: *"I'm not gonna let him destroy my plans, and what I'm doing, and what I find important"*. Other youth had become more ambitious, were determined to do something meaningful with their life, had become more focused on doing well in school, or had set higher goals for themselves. For example, one father shared:

Once he decides to go for something, he goes all-in...I'd say it's become even more pronounced. And he puts it himself, 'There's no point doing things if they don't make sense'...He's extremely self-disciplined when it comes to his studying. So I'd say he's raised the bar for himself, compared with how he was before.

**More politically engaged.** According to seven caregivers, their youth had become more politically active post-terror. For example, one father noted:

He's certainly very dedicated and...He was politically involved and had social conscience before too, but making a difference does seem to matter more to him now, afterwards. And I would say that that's a good thing.

Notably, a few caregivers reported that their youth had taken on leading roles at different levels in the Norwegian Labor Party's youth organization after the attack.

### **Changed philosophy of life**

**Personal values.** Twenty caregivers said that their youth had become more aware of their personal values. In particular, they communicated that their youth now had a new perspective regarding what really matters in life, were less focused on 'materialistic things', and were better able to distinguish the important from 'trifles'. In one father's words:

He said it very plainly a few days ago, that he's very, very happy to have found himself, and his inner values, and what matters to him. What really matters. And that's perhaps a change that...that probably stems from the Utøya attack.

A small subset of caregivers noted that their youths' existing values had been strengthened or that they had developed new values. One parent specifically said that his daughter had changed spiritually post-terror, by converting to a new religion:

Well, the biggest change I've noticed in \*name\*, is that she's gained a different perspective on life, to the point that she's converted and become a \*religion\*. It's obvious that she...this stirred something in her...That this sent her in a direction where she's looking for the meaning of life and has in a way gained a deeper understanding of things. And in many ways I see that as a positive thing.

**Appreciation of life.** Seventeen caregivers had noticed a newfound appreciation of life in their youth post-trauma: They were more grateful and had a renewed appreciation for 'the little' things in life. As one mother related: *"I've noticed that she's more grateful for things in life. She was always a cheerful girl, but I've noticed that she appreciates things a lot more in a different way. That's for sure"*. Similarly, a father stated: *"He did say quite early on that he appreciates the little things in life more. And he does that. He really does"*. According to one father, his son also appreciated 'bigger things', like the fact that he was *"living in a democracy, in a safe and good country"*.

Other youth had expressed that they were more aware of the value of their own life and how important it is to take care of each other. Some had reportedly become more concerned about 'really living'. As one mother



noted: “*He says that: ‘You have to live your life to the fullest, while you can. You never know when something is gonna happen’*”. In a similar vein, one father related: “*...she has talked to me about not taking her life for granted anymore. Things can happen*”.

### **Uncertainty About Their Observations: Caregiver Questions and Concerns**

It bears mention that of the 162 caregivers who described positive post-trauma changes, 51 expressed questions about how to make attributions for what they observed. That is, they stated that it was difficult to know whether the observed changes were trauma related or a result of normative maturation and development. In one mother’s words:

Obviously, it’s hard to tell whether the changes she’s undergone are directly related to Utøya, or if they’re just a normal part of development from the age of 17 to 19...But I personally think she’s become more independent.

In addition, 32 caregivers stated explicitly that the positive changes they had observed were enhancements of positive qualities their youth possessed pre-trauma, most notably compassion and maturity. As one case in point, one father said: “*He already was a reflective young man, and he has become even more reflective*”.

Also, 30 caregivers expressed ambivalence regarding whether the changes they described were unambiguously positive for their youth, particularly their increased maturity. For example, one father said: “*I think that he’s taken to reflecting a lot on a great many things in life which he really might be too young to think about*”. Thus, while they were reporting changes that some might frame objectively as “positive”, they raised concerns about the specific nature, timing, or source of the change.

## **Discussion**

In this study we sought to increase understanding of positive changes post-trauma by documenting the nature and frequency of caregivers’ observed PTG among young survivors of a terrorist attack. Although some were not sure about how to make the attributions about the differences they observed, most caregivers (64%) reported observing at least one type of positive change in their youth 2.5 years post-attack. Overall, this finding suggests that PTG is an observable phenomenon among youth exposed to terror. Furthermore, the dimensions of growth described by the caregivers align with the broad categories of PTG specified in the model developed by Tedeschi and Calhoun (1995) and studied among children, adolescents, and adults (Chun & Lee, 2008; Glad et al., 2013; Petrie, Buick, Weinman, & Booth, 1999; Salter & Stallard, 2004; Shakespeare-Finch & Copping, 2006; Wong, Cavanaugh, Macleamy, Sojourner-Nelson, & Koopman, 2009). Indeed, the themes identified are largely similar to those outlined in the existing PTG literature, such as increased personal strength, greater emotional expressiveness, increased openness and self-disclosure, and a new appreciation for life. However, parents also described several positive changes not adequately assessed in current measures of the construct (e.g., Kilmer et al., 2009; Tedeschi & Calhoun, 1996), including new personal motivation, increased compassion, a stronger family bond, a changed social style, and greater maturity.

Of the identified PTG domains, caregiver respondents most frequently reported observing relational growth, most notably a stronger family bond and increased compassion. Given that the reports are grounded in caregivers’ observations, it is perhaps not unexpected that family-related changes or changes related to the social context were especially prevalent. That said, the results do hold relevance – studies of adaptation and coping in the face of adversity consistently highlight the importance of the caregiver-child/youth relationship and the family environment (e.g., Luthar, 2003; Masten & Coatsworth, 1998), both of which may be facilitated by the specific positive changes reported by the caregivers in the present work.

According to the caregivers, the behavioral changes associated with reports of a strengthened family bond included verbally and physically expressed affection and appreciation, more physical and verbal interaction, and more openness. These themes parallel the findings by Shakespeare - Finch and Barrington (2012) in their study of survivors of diverse traumas (e.g., motor vehicle accidents, bereavement, life-threatening illness or injury) and their significant others; that sample’s significant others were most likely to describe observing changes in how the survivors’ related to others.

Increased compassion among the youth was, according to the caregivers, reflected in a new desire and ability to help others, and greater interpersonal sensitivity, including greater empathy. These descriptions are in line with the phenomenon “altruism born out of suffering”, coined by Staub (2003) to capture the observation that some individuals who have been exposed to violence become more caring and helpful post-trauma. Although Tedeschi et al. (1998, p.12) theorized that traumatic events “may be a kind of empathy training” which may contribute to survivors’ motivations to help others, few PTG studies have examined altruism and prosocial behavior. One recent exception is Frazier et al. (2013) investigation in which they found a positive association between lifetime exposure to trauma and prosocial behavior in a sample of undergraduates. In another recent study exploring PTG among youth who had experienced severe trauma, Glad et al. (2013) found that some youth described a desire to help and protect others as a positive post-trauma change. Taken together, these findings suggest that research should explore prosocial behavior as a potential manifestation of PTG.

In fact, the present results underscore multiple points about these observations that warrant further investigation. While there is clear utility in exploring the degree to which one's struggle in the aftermath of trauma can yield or contribute to increased prosocial behavior, some of this sample's caregivers noted that such positive changes can go 'too far'. For instance, a subset of caregivers in our study who reported increased compassion in their youth also related that their children had become so concerned about the welfare of others that they neglected their own needs. In future studies, it is necessary to assess youths' experiences of what are thought to be positive post-trauma changes, such as increased compassion. Put another way, are such changes experienced as positive by the youth themselves as well as those close to them? In a similar vein, the fact that some caregivers questioned the specific nature of the changes they had observed may reflect their ability to acknowledge the 'opacity' of their children's mind, that is, to understand that though one may have hypotheses about what others are thinking or feeling, one can never really know what is happening in someone else's mind (Muller & Midgley, 2015). In line with these points, Roepke, Forgeard, and Elstein (2014) have argued that an exploration of the cognitions that accompany positive post-trauma behavioral change may be essential to determining whether the changes reflect growth or not. Although youth participants completed a quantitative PTG measure (reported elsewhere), because we did not collect the youths' own descriptions of their positive changes post-trauma, such an exploration was not possible here.

The most common type of positive personal change reported by the caregivers was greater maturity. According to caregivers' reports, the youth had become more reflective, independent, and responsible, and they took better care of themselves post-terror. This sense of increased maturity aligns well with findings from two other studies on young trauma survivors (Glad et al., 2013; Wong et al., 2009). However, a crucial caveat bears mention: almost one-fifth of the caregivers who described positive post-trauma changes raised concerns about the specific nature, timing, or source of these changes, or expressed ambivalence as to whether they were indisputably positive for their youth, particularly those caregivers who noted that their children had become more mature. For example, some of those caregivers said that their youth had 'grown up too fast' or 'lost a part of their childhood'. Consistent with these notions, the researchers in the two aforementioned studies on PTG in young trauma survivors (Glad et al., 2013; Wong et al., 2009) have questioned whether certain post-trauma changes actually are indicative of positive growth, especially when reported in youth. Though seemingly positive changes, such as increased physical and verbal affirmations of love, may be motivated by a greater appreciation of family and reflect a stronger family bond post-trauma, it is also possible that they reflect a heightened sense of vulnerability and anxiety and signify the survivor's effort to reestablish his/her protective shield. As such, the motivation behind, and potential adverse effects of, changes which are described as positive by the survivors themselves and/or their significant others, are important topics for future work.

Changed philosophy of life was the least frequently reported of the three major growth domains, but the themes described by the caregivers are consistent with previous work in this field, including changed values and a newfound appreciation of life. However, in contrast with results in the broader literature on PTG, in which spiritual growth is a prime and often-reported area of growth, only one caregiver reported observing a spiritual change in their youth. Although some may maintain that spiritual growth or change may be more difficult to observe and necessitates self-report, this result reflecting minimal spiritual change in the present sample is in line with findings from two other recent studies on PTG among Norwegian youth who had experienced trauma (Glad et al., 2013; Hafstad et al., 2011). Given the fact that Scandinavian countries are among the most secular countries in Europe (Brown & Snape, 2010), this finding is not surprising and demonstrates the relevance of the broader ecological context and culture in considerations of PTG (Kilmer et al., 2014). That specific point notwithstanding, certain domains of PTG may be more subjective than others and may manifest primarily as internal processes or states (e.g., thoughts and feelings) rather than as behavioral changes; they would, in turn, be less visible to others (Blackie et al., 2015; Park & Lechner, 2006). Such factors may explain why, in the present work, changes in youth's philosophy of life reflected the least frequently reported dimension or type of growth.

This study adds significantly to the PTG field by systematically describing first-hand observations of young terrorist survivors' positive post-trauma changes. It is one of the few studies to employ a qualitative approach to examine PTG and associated behavioral changes and, on the basis of the present review, the first to do so in the context of the caregiver-youth dyad. Although the young survivors' ages ranged from early adolescence to transition-aged or emerging adulthood, in light of the salience of caregivers in young people's lives more generally – and in the face of stress or trauma more specifically (see, e.g., Gil - Rivas & Kilmer, 2013; Gil - Rivas, Silver, Holman, McIntosh, & Poulin, 2007; Kilmer & Gil - Rivas, 2010; Masten & Coatsworth, 1998; Salmon & Bryant, 2002) – the use of caregivers as the primary data sources for this specific effort is a meaningful asset. This strength is even more noteworthy because of the relative paucity of studies involving corroborating or external respondents regarding potential post-trauma changes. Given that some scholars have framed PTG as illusory, or suggested that individuals' self-reports simply reflect coping (Frazier et al., 2009; Taylor et al., 2000), the present study's reliance on external respondents' reports constitutes a significant strength, one that can help support the validity of the construct. Other study strengths include the substantial sample size, particularly for a qualitative, long-term, post-trauma study, and the high levels of

respondents with complete and usable data. Furthermore, the fact that the parental couples largely agreed as to whether their youth had displayed positive post-traumatic changes further supports the validity of the present findings.

### **Limitations and Directions for Future Research**

Some relevant limitations should be considered when interpreting our findings. First, the study protocol involved asking caregivers to retrospectively compare their children's behavior pre-and post-trauma. As noted by Frazier et al. (2009), this is a demanding task: caregivers had to remember how their child behaved 2.5 years ago, compare it to their present behavior, and judge whether there was a noticeable change. Additionally, the caregivers had to decide whether they believed that these changes were directly attributable to their youth's experience of the attack. As some participants noted, it is difficult to know whether the observed changes are trauma related or simply a result of the youths' natural maturation process. This is a relevant concern, and limited research has examined this question explicitly. This gap points to another needed focus for future work but, as others have related, the existing evidence appears to point to PTG as beyond normative maturation or growth (see Alisic et al., 2008; Kilmer et al., 2014; Taku, Kilmer, Cann, Tedeschi, & Calhoun, 2012). The present work's methods do not permit clear distinctions regarding the timing of the changes observed or the degree to which they were catalyzed by their youth's experience of the attack and its aftermath. Nevertheless, the shared nature of the experience and the fact that it was such a dramatic 'marker' event probably aided the caregivers in having a sense of before vs. after, and some respondents not only explicitly noted how their observations of changes in their children related to aspect of the trauma but shared how their child described that link as well.

As a related potential issue, caregivers were asked whether they had observed positive changes in their youth 2.5 years post-terror. However, this inquiry was not part of earlier waves of the study, and caregivers were not asked to specify *when* they had noticed these changes. As such, it is not possible to know if the youth changed soon after the event or if they had behaved differently ever since, or whether the changes were temporary or enduring. On the other hand, the fact that 2.5 years had passed since the traumatic event may also be framed as a study strength – it is a substantial long-term follow-up that provided the youth time not only to experience growth, but to translate it into action.

Also, it bears mention that roughly 10% of the caregivers did not answer the research question directly or stated that it was too difficult to answer. It is possible that different (or additional) prompts may have resulted in more usable data. For instance, it might have been useful to employ a more stepwise series of prompts, beginning with more open-ended questions and following with more specific inquiries (e.g., Can you give examples of what you noticed? How have these changes come into play for your youth in daily life? Have they influenced how the youth functioned at home? At school? With friends?).

Further, the present results are based on observations of a fairly unique group, with regard to the survivors themselves (e.g., politically active youth) and the event to which they were exposed (significant life-threat via a single, human-made trauma; geographically constricted to a small island). As such, it is not possible to draw conclusions about the potential generalizability of these findings to other populations, including those who have experienced other traumas, and generalizations of these findings should be made with caution.

Finally, although their status as 'external' observers is a study strength, using survivors' caregivers as reporters of positive post-trauma change also brought certain challenges. For instance, caregivers may be less able to report accurately about their children's internal experiences (unless those have been verbalized by their youth) and they may lack in-depth knowledge about certain aspects of their youth's life, such as friendships and romantic involvements. As such, it is possible that others in the youths' immediate social network, such as their friends/siblings/boy-girlfriends, or classmates, would have provided different reports of positive changes or PTG. In addition, caregivers' responses may have been influenced by a desire or wish to believe that their children gained something from this terrible experience and are adjusting well post-terror (Frazier et al., 2014). In light of the nature of this event, the caregivers were potentially traumatized themselves, through their children's experience on the island, and it is possible that their reports of PTG reflect primarily their own experiences. However, asking caregivers to report concrete and behavioral examples of positive changes likely minimized the degree to which their own reactions and responses affected the present set of findings.

By exploring potential positive effects growing out of youths' attempts to deal with terror, our intent is not to diminish the possible negative consequences of experiencing trauma or the diverse negative effects of this attack for individuals, families, and communities. Rather, as asserted by Vollhardt (2009), we believe a focus on and improved understanding of positive changes experienced and observed post-trauma may lead to a more balanced view of trauma survivors, which can help reduce the stigma associated with victimization.

That this study's findings indicate that many trauma survivors change their behavior in a positive and observable way is an important contribution to the trauma literature in general, and the PTG area in particular. That said, while the examples of behavioral changes from an observers' view-point support the validity of the PTG construct, important questions remain, including the clinical implications of these positive post-trauma changes. For instance, are the perceived 'positive' changes unambiguously positive for survivors? And, of

special salience, do perceived (or observed) positive changes relate to survivors' post-trauma adjustment, such as heightened well-being, increased positive mental health, greater life satisfaction, enhanced quality of life, or reduced trauma-related symptomatology over time (Kilmer et al., 2014; Kilmer & Gil - Rivas, 2010)? Better understanding such potential linkages has noteworthy implications for gauging the clinical relevance of growth and could also provide needed evidence for evaluating the utility of efforts to facilitate growth via clinical interventions.

Nevertheless, while that crucial question remains unanswered, multiple authors, theorists, and clinicians have deemed facilitating PTG a "legitimate" aim in work with trauma survivors (e.g., Calhoun & Tedeschi, 1999; Ickovics et al., 2006; Linley & Joseph, 2004) and, as Kilmer and colleagues (2014, p. 515) note, such work is also consistent with broader based efforts to build on youths' resources, support their active coping, and help them negotiate and navigate the changes in their world following trauma (Tedeschi & Calhoun, 2009; Tedeschi & Kilmer, 2005). While the existing literature has focused on the roles of professionals in supporting the PTG process (e.g., Kilmer et al., 2014), some authors have also noted that caregivers and supportive others not only influence post-trauma adaptation in youth, they can contribute to possible PTG (e.g., Kilmer & Gil-Rivas, 2008). For instance, when they gauge the timing to be appropriate, caregivers can initiate discussion of the experience and, as warranted, tell their children of positive changes they have observed in the youth. They can also listen actively for their youth's statements regarding positive changes (e.g., Kilmer & Gil-Rivas, 2008).

The nature of the present study's trauma (and the fact that many caregivers were not only affected by their youth's experience but by their own upset as they learned of the attack and followed the news reports) represents well the notion that a given family system may also be impacted meaningfully when a family member experiences trauma (Berger & Weiss, 2009). With this possibility as backdrop, some authors (see Berger & Weiss 2009) have framed an expanded, family-level model of PTG, which includes changes in family values, greater warmth and intimacy in family relations, and a stronger family identity. In line with these ideas, the caregivers in this study reported that their youth displayed more affection, both verbally and physically; spent more time with their family and were more open; and showed a newfound appreciation of their family. With an objective of informing strategies for supporting and facilitating positive family functioning, future applied research on PTG and, more broadly, post-trauma adaptation, should include a focus on family-level indicators (e.g., communication, expressions of emotion) and changes related to the family system and the factors and conditions that contribute to positive change.

**Conflict of Interest Statement:** The authors declare that there are no conflicts of interest.

**Data Availability Statement:** The personal narratives of each caregivers' observed positive change in their youth cannot be made accessible due to ethical considerations and protocol stipulations regarding protections of the anonymity of the participants and their children.

### **Ethics Statement**

The work described here and all procedures involving human participants were in accordance with the standards for Ethical Principles of Psychologists, as put forth by the American Psychological Association, as well the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the Regional Committee for Medical and Health Research Ethics in Norway, and participants provided written informed consent.

### **Author Contributions**

KAG collaborated with the design of the study and acquisition of the data, analyzed the data, and wrote the manuscript. RPK contributed to the grant proposal that supported this work, collaborated with the interpretation of the data and their implications and the preparation and revision of the manuscript. GD is PI of the Utøya study and was responsible for the acquisition of the data, collaborated with the design of the study, and took part in the editing of the final manuscript. GSH wrote the grant proposal that supported this work, collaborated with the design of the study, acquisition of the data, coded parts of the data, and revised and edited the manuscript.

### **Acknowledgements**

This effort was made possible through the support of the Norwegian Extra Foundation for Health and Rehabilitation and the Norwegian Council for Medical Health, for which the authors express their gratitude. We also sincerely thank the caregivers who participated in this study.

## References

- Alisic, E., Van Der Schoot, T. A. W., Van Ginkel, J. R., & Kleber, R. J. (2008). Looking beyond posttraumatic stress disorder in children: Posttraumatic stress reactions, posttraumatic growth, and quality of life in a general population sample. *Journal of Clinical Psychiatry, 69*(9), 1455-1461.
- Andrades, M., García, F. E., Reyes-Reyes, A., Martínez-Arias, R., & Calonge, I. (2016). Psychometric properties of the posttraumatic growth inventory for children in Chilean population affected by the earthquake of 2010. *American Journal of Orthopsychiatry, 86*(6), 686-692. doi:10.1037/ort0000182
- Arnett, J. (2000). Emerging adulthood: a theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480.
- Berger, R., & Weiss, T. (2009). The posttraumatic growth model: An expansion to the family system. *Traumatology, 15*(1), 63-74. doi:10.1177/1534765608323499
- Blackie, L. E. R., Jayawickreme, E., Helzer, E. G., Forgeard, M. J. C., & Roepke, A. M. (2015). Investigating the veracity of self-perceived posttraumatic growth: A profile analysis approach to corroboration. *Social Psychology and Personality Science, 6*(7), 788-796. doi:10.1177/1948550615587986
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, Calif: Sage Publications.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi:10.1191/1478088706qp063oa
- Brown, C. G., & Snape, M. F. (2010). *Secularisation in the Christian world: Essays in honour of Hugh McLeod*. Farnham: Ashgate.
- Calhoun, L. G., & Tedeschi, R. G. (1999). *Facilitating posttraumatic growth: A clinician's guide*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Calhoun, L. G., & Tedeschi, R. G. (2006). *Handbook of posttraumatic growth: Research and practice*. New York: Lawrence Erlbaum.
- Chun, S., & Lee, Y. (2008). The experience of posttraumatic growth for people with spinal cord injury. *Qualitative Health Research, 18*(7), 877-890. doi:10.1177/1049732308318028
- Cryder, C. H., Kilmer, R. P., Tedeschi, R. G., & Calhoun, L. G. (2006). An exploratory study of posttraumatic growth in children following a natural disaster. *American Journal of Orthopsychiatry, 76*(1), 65-69. doi:10.1037/0002-9432.76.1.65
- Davis, C. G., Nolen-Hoeksema, S., & Larson, J. (1998). Making sense of loss and benefiting from the experience: Two construals of meaning. *Journal of Personality and Social Psychology, 75*(2), 561-574. doi:10.1037/0022-3514.75.2.561
- Devine, K., Reed-Knight, B., Loiselle, K., Fenton, N., & Blount, R. (2010). Posttraumatic growth in young adults who experienced serious childhood illness: A mixed-methods approach. *Journal of Clinical Psychology in Medical Settings, 17*(4), 340-348. doi:10.1007/s10880-010-9210-7
- Dyb, G., Jensen, T., Nygaard, E., Ekeberg, O., Diseth, T., Wentzel-Larsen, T., & Thoresen, S. (2014). Post-traumatic stress reactions in survivors of the 2011 massacre on Utøya Island, Norway. *British Journal of Psychiatry, 204*(5), 361-367. doi:10.1192/bjp.bp.113.133157
- Frazier, P., Coyne, J., & Tennen, H. (2014). Post-traumatic growth: A call for less, but better, research. *Eur. J. Personal., 28*(4), 337-338.
- Frazier, P., Greer, C., Gabrielsen, S., Tennen, H., Park, C., Tomich, P., & Gold, S. N. (2013). The relation between trauma exposure and prosocial behavior. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(3), 286-294. doi:10.1037/a0027255
- Frazier, P., Tennen, H., Gavian, M., Park, C., Tomich, P., & Tashiro, T. (2009). Does self-reported posttraumatic growth reflect genuine positive change? *Psychological Science, 20*(7), 912-919. doi:10.1111/j.1467-9280.2009.02381.x
- Glad, K. A., Jensen, T. K., Hafstad, G. S., & Dyb, G. (2016). Post-traumatic stress disorder and exposure to trauma reminders after a terrorist attack. *Journal of Trauma & Dissociation, 17*(4), 435-447. doi:10.1080/15299732.2015.1126777
- Glad, K. A., Jensen, T. K., Holt, T., & Ormhaug, S. M. (2013). Exploring self-perceived growth in a clinical sample of severely traumatized youth. *Child Abuse & Neglect: The International Journal, 37*(5), 331-342. doi:10.1016/j.chiabu.2013.02.007
- Hafstad, G. S. (2009). *A qualitative approach to understanding posttraumatic growth in children and adolescents*. Paper presented at the The 11th European Conference on Traumatic Stress Studies (ECOTS) Oslo, Norway.
- Hafstad, G. S., Kilmer, R. P., & Gil-Rivas, V. (2011). Posttraumatic growth among Norwegian children and adolescents exposed to the 2004 tsunami. *Psychological Trauma: Theory, Research, Practice, and Policy, 3*(2), 130-138. doi:10.1037/a0023236
- Helgeson, V. S. (2010). Corroboration of growth following breast cancer: Ten years later. *Journal of Social and Clinical Psychology, 29*(5), 546-574. doi:10.1521/jscp.2010.29.5.546

- Hobfoll, S. E., Hall, B. J., Canetti-Nisim, D., Galea, S., Johnson, R. J., & Palmieri, P. A. (2007). Refining our understanding of traumatic growth in the face of terrorism: Moving from meaning cognitions to doing what is meaningful. *Applied Psychology, 56*(3), 345-366. doi:10.1111/j.1464-0597.2007.00292.x
- Ickovics, J. R., Meade, C. S., Kershaw, T. S., Milan, S., Lewis, J. B., & Ethier, K. A. (2006). Urban teens: Trauma, posttraumatic growth, and emotional distress among female adolescents. *Journal of Consulting and Clinical Psychology, 74*(5), 841-850. doi:10.1037/0022-006X.74.5.841
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: Free Press.
- Jayawickreme, E., & Blackie, L. E. R. (2014). Post-traumatic growth as positive personality change: Evidence, controversies and future directions. *European Journal of Personality, 28*(4), 312-331. doi:10.1002/per.1963
- Kilmer, R. P., Gil-Rivas, V., Griese, B., Hardy, S. J., Hafstad, G. S., & Alisic, E. (2014). Posttraumatic growth in children and youth: Clinical implications of an emerging research literature. *American Journal of Orthopsychiatry, 84*(5), 506-518. doi:10.1037/ort0000016
- Kilmer, R. P., & Gil-Rivas, V. (2010). Exploring posttraumatic growth in children impacted by Hurricane Katrina: Correlates of the phenomenon and developmental considerations. *Child Development, 81*(4), 1211-1227. doi:10.1111/j.1467-8624.2010.01463.x
- Kilmer, R. P., Gil-Rivas, V., Tedeschi, R. G., Cann, A., Calhoun, L. G., Buchanan, T., & Taku, K. (2009). Use of the revised Posttraumatic Growth Inventory for Children. *Journal of Traumatic Stress, 22*(3), 248-253. doi:10.1002/jts.20410
- Kimhi, S., Eshel, Y., Zysberg, L., & Hantman, S. (2009). Getting a life: Gender differences in postwar recovery. *A Journal of Research, 61*(7), 554-565. doi:10.1007/s11199-009-9660-2
- Laufer, A., Raz-Hamama, Y., Levine, S. Z., & Solomon, Z. (2009). Post traumatic growth in adolescence: The role of religiosity, distress, and forgiveness. *Journal of Social and Clinical Psychology, 28*(7), 862-880. doi:10.1521/jscp.2009.28.7.862
- Laufer, A., & Solomon, Z. (2006). Posttraumatic symptoms and posttraumatic growth among Israeli youth exposed to terror incidents. *Journal of Social and Clinical Psychology, 25*(4), 429-447.
- Levine, S. Z., Laufer, A., Hamama-Raz, Y., Stein, E., & Solomon, Z. (2008). Posttraumatic growth in adolescence: Examining its components and relationship with PTSD. *Journal of Traumatic Stress, 21*(5), 492-496. doi:10.1002/jts.20361
- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress, 17*(1), 11-21. doi:10.1023/B:JOTS.0000014671.27856.7e
- Luthar, S. S. (2003). *Resilience and vulnerability: Adaptation in the context of childhood adversities*. New York: Cambridge University Press.
- Massey, S., Cameron, A., Ouellette, S., & Fine, M. (1998). Qualitative approaches to the study of thriving: What can be learned? *Journal of Social Issues, 54*(2), 337-355. doi:10.1111/j.1540-4560.1998.tb01222.x
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments. *American Psychologist, 53*(2), 205-220. doi:10.1037/0003-066X.53.2.205
- McMillen, J. C., & Cook, C. L. (2003). The positive by-products of spinal cord injury and their correlates. *Rehabilitation Psychology, 48*(2), 77-85. doi:10.1037/0090-5550.48.2.77
- Moore, A. M., Gamblin, T. C., Geller, D. A., Youssef, M. N., Hoffman, K. E., Gemmell, L., . . . Steel, J. L. (2011). A prospective study of posttraumatic growth as assessed by self-report and family caregiver in the context of advanced cancer. *Psycho-oncology, 20*(5), 479-487. doi:10.1002/pon.1746
- Muller, N., & Midgley, N. (2015). Approaches to assessment in time-limited Mentalization-Based Therapy for Children (MBT-C). *Frontiers in Psychology, 6*, 1-10.
- Pals, J. L., & McAdams, D. P. (2004). The transformed self: A narrative understanding of posttraumatic growth. *Psychological Inquiry, 15*(1), 65-69.
- Park, C. L., Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress-related growth. *Journal of Personality, 64*(1), 71-105.
- Park, C. L., & Lechner, S. (2006). Measurement issues in growth research. In L. G. Calhoun & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth* (pp. 47-67). New Jersey: Lawrence Erlbaum Associates.
- Petrie, K. J., Buick, D. L., Weinman, J., & Booth, R. J. (1999). Positive effects of illness reported by myocardial infarction and breast cancer patients. *Journal of Psychosomatic Research, 47*(6), 537-543. doi:10.1016/S0022-3999(99)00054-9
- Roepke, A., Forgeard, M., & Elstein, J. (2014). Providing context for behaviour: Cognitive change matters for post-traumatic growth. *European Journal of Personality, 28*(4), 347-348.
- Salmon, K., & Bryant, R. A. (2002). Posttraumatic stress disorder in children: The influence of developmental factors. *Clinical Psychology Review, 22*(2), 163-188. doi:10.1016/S0272-7358(01)00086-1
- Salter, E., & Stallard, P. (2004). Posttraumatic growth in child survivors of a road traffic accident. *Journal of Traumatic Stress, 17*(4), 335-340. doi:10.1023/B:JOTS.0000038482.53911.01

- Shakespeare-Finch, J., & Armstrong, D. (2010). Trauma type and posttrauma outcomes: Differences between survivors of motor vehicle accidents, sexual assault, and bereavement. *Journal of Loss and Trauma, 15*(2), 69-82. doi:10.1080/15325020903373151
- Shakespeare-Finch, J., & Copping, A. (2006). A grounded theory approach to understanding cultural differences in posttraumatic growth. *Journal of Loss and Trauma, 11*(5), 355-371. doi:10.1080/15325020600671949
- Shakespeare-Finch, J., & Barrington, A. J. (2012). Behavioural changes add validity to the construct of posttraumatic growth. *Journal of Traumatic Stress, 25*(4), 433-439. doi:10.1002/jts.21730
- Shakespeare-Finch, J., & Enders, T. (2008). Corroborating evidence of posttraumatic growth. *Journal of Traumatic Stress, 21*(4), 421-424. doi:10.1002/jts.20347
- Staub, E. (2003). *The psychology of good and evil: Why children, adults, and groups help and harm others*. New York: Cambridge University Press.
- Taku, K., Kilmer, R. P., Cann, A., Tedeschi, R. G., & Calhoun, L. G. (2012). Exploring posttraumatic growth in Japanese youth. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(4), 411-419. doi:10.1037/a0024363
- Tallman, B. A., Lohnberg, J., Yamada, T. H., Halfdanarson, T. R., & Altmaier, E. M. (2014). Anticipating posttraumatic growth from cancer: Patients' and collaterals' experiences. *Journal of Psychosocial Oncology, 32*(3), 342-358. doi:10.1080/07347332.2014.897291
- Taylor, S. E., Kemeny, M. E., Reed, G. M., Bower, J. E., & Gruenewald, T. L. (2000). Psychological resources, positive illusions, and health. *American psychologist, 55*(1), 99-109. doi:10.1037/0003-066X.55.1.99
- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma & transformation: Growing in the aftermath of suffering*. Thousand Oaks: Sage Publications.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455-471. doi:10.1002/jts.2490090305
- Tedeschi, R. G., & Calhoun, L. G. (2009). The clinician as expert companion. In C. L. Park, S. Lechner, A. Stanton, & M. Antoni (Eds.), *Medical illness and positive life change: Can crisis lead to personal transformation* (pp. 215-235). Washington, DC: American Psychological Association.
- Tedeschi, R. G., & Kilmer, R. P. (2005). Assessing strengths, resilience, and growth to guide clinical interventions. *Professional Psychology: Research and Practice, 36*(3), 230-237. doi:10.1037/0735-7028.36.3.230
- Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*. Mahwah, N.J.: Erlbaum.
- Vollhardt, J. R. (2009). Altruism born of suffering and prosocial behavior following adverse life events: A review and conceptualization. *Social Justice Research, 22*(1), 53-97. doi:10.1007/s11211-009-0088-1
- Weiss, T. (2002). Posttraumatic growth in women with breast cancer and their husbands: An intersubjective validation study. *Journal of Psychosocial Oncology, 20*(2), 65-80. doi:10.1300/J077v20n02\_04
- Wong, M. L., Cavanaugh, C. E., Macleamy, J. B., Sojourner-Nelson, A., & Koopman, C. (2009). Posttraumatic growth and adverse long-term effects of parental cancer in children. *Families, Systems, & Health, 27*(1), 53-63. doi:10.1037/a0014771
- Yu, X.-N., Lau, J. T. F., Zhang, J., Mak, W. W. S., Choi, K. C., Lui, W. W. S., & Chan, E. Y. Y. (2010). Posttraumatic growth and reduced suicidal ideation among adolescents at month 1 after the Sichuan Earthquake. *Journal of Affective Disorders, 123*(1-3), 327-331. doi:10.1016/j.jad.2009.09.019
- Zoellner, T., & Maercker, A. (2006). Posttraumatic growth in clinical psychology - A critical review and introduction of a two component model. *Clinical Psychology Review, 26*(5), 626-653. doi:10.1016/j.cpr.2006.01.008