

A Qualitative Approach to Assessing the Validity of the Posttraumatic Growth Inventory

JANE SHAKESPEARE-FINCH and EMMA MARTINEK

*School of Psychology and Counselling, Institute of Health and
Biomedical Innovation, Queensland University of Technology,
Brisbane, Australia*

RICHARD G. TEDESCHI and LAWRENCE G. CALHOUN

*Department of Psychology, University of North Carolina at Charlotte,
Charlotte, North Carolina, USA*

The Posttraumatic Growth Inventory (PTGI) is the most commonly used measure of positive psychological change that can result from negotiating a traumatic experience. While the PTGI has strong internal reliability, validity studies are still sparse. The present research details trauma survivors' understanding of items comprising the PTGI in order to qualitatively assess content validity. Participants were 14 trauma survivors who completed the PTGI and participated in a semistructured interview. Thematic analysis was conducted on participants' transcribed interviews. One latent theme was identified reflecting that questions were consistently understood. A relationship was found between the constituent themes identified and the five factors of the PTGI. Participants answered the PTGI statements in a way that is consistent with the purpose of the instrument, with only a small discrepancy found when some participants used the PTGI scale to indicate when a decrease in an element of the inventory had been experienced. Overall results supported the content validity of the PTGI.

KEYWORDS *content validity, meaning, Posttraumatic Growth Inventory, resilience, trauma*

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Address correspondence to Jane Shakespeare-Finch, School of Psychology and Counselling, Queensland University of Technology, Victoria Park Road, Kelvin Grove, Qld 4059, Brisbane, Australia. E-mail: j.shakespeare-finch@qut.edu.au

Trauma is not an uncommon event. In the Western world, for example, 57% of Australian citizens experience a traumatic event in their lifetime (Creamer & Parslow, 2008), and an even higher prevalence of trauma has been reported in the United States (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Yet relatively few trauma survivors go on to develop disorders such as posttraumatic stress disorder (PTSD) or be emotionally crippled in the longer term by their traumatic experience (Heiman, 2004). A more common outcome is resilience (Bonnano, 2004), and for some people enduring a traumatic experience can lead to positive life changes, or posttraumatic growth (PTG) (Calhoun & Tedeschi, 2006). It may also be that a trauma survivor who has experienced growth subsequently becomes more resilient to future challenges or that his or her coping resources and strategies become more proficient (e.g., Westphal & Bonanno, 2007).

Posttraumatic growth is a term used to describe positive psychological change that may occur after the experience of a traumatic event. Such change is not due to the trauma per se but, rather, can be an outcome of the process engaged in dealing with and coming to terms with the trauma (Tedeschi & Calhoun, 1995). In the last 15 years, research investigating the posttraumatic growth phenomenon has been aided by the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI is currently the most widely used instrument to assess posttraumatic growth (Frazier et al., 2009). The PTGI is considered a reliable scale (Feder et al., 2008; Mystakidou, Tsilika, Parpa, Galanos, & Vlahos, 2008; Tedeschi & Calhoun, 1996), though dissent remains among some academics regarding its validity (e.g., Frazier et al., 2009; Hobfoll et al., 2007). Quantitative studies have supported the validity of the PTGI (Shakespeare-Finch & Barrington, 2012; Shakespeare-Finch & Enders, 2008; Smith & Cook, 2004; Weiss, 2004), but the present study took an alternative, qualitative approach to investigate the content validity of the statements that comprise the PTGI.

The process of posttraumatic growth involves the creation of new, more comprehensive schemas and beliefs, developed after previously held beliefs were shown to be flawed (Jenewein et al., 2008). The reconstruction of psychological processes can produce a more competent and realistic person (Tedeschi, Calhoun, & Cann, 2007). Rumination facilitates the development of posttraumatic growth, that is, processing what occurred in the creation of new schemas (Prati & Pietrantonio, 2009). Trauma survivors who reconstruct their definitions or beliefs, incorporating their trauma experience into the narratives of their lives, make their understanding of the world more comprehensive (Tedeschi & Calhoun, 1995). Growth can include changes in thoughts, emotions, sociocultural factors, how life narratives are dictated, and wisdom (Tedeschi et al., 2007).

Posttraumatic growth has three broad dimensions: interpersonal relationships, philosophy of life, and self-perception (Calhoun & Tedeschi, 2006). The interpersonal relationships dimension includes having increased sensitivity to

others and holding greater value and appreciation of relationships that may subsequently become closer (Tedeschi & Calhoun, 1995). The philosophy of life dimension refers to when trauma survivors find meaning from the incomprehensibility of the traumatic experience (Engelkemeyer & Marwit, 2008). Trauma survivors who experience posttraumatic growth in the self-perception dimension may consider themselves to be stronger, demonstrating greater confidence in themselves and their actions as well as seeing new possibilities available that may not have been otherwise (Calhoun & Tedeschi, 2006). The differing dimensions of posttraumatic growth can also be influenced by the type of trauma experienced. For example, in a study comparing PTGI scores and symptoms of PTSD in survivors of sexual assault, survivors of serious motor vehicle crashes, and those who had been bereaved, participants comprising the bereaved group reported significantly higher levels of growth (Shakespeare-Finch & Armstrong, 2010).

The PTGI, which was developed in the United States (Tedeschi & Calhoun, 1996), has since been used across cultures in multiple studies investigating posttraumatic growth (Mystakidou et al., 2008). For example, posttraumatic growth, as measured by the PTGI, has been found in populations in Australia (Morris, Shakespeare-Finch, Rieck, & Newbery, 2005), Japan (Taku, Calhoun, et al., 2008), Greece (Mystakidou et al., 2008), and Israel (Levine, Hamama-Raz, Stein, & Solomon, 2008). The factor structure has also been replicated in other countries such as Australia (Morris et al., 2005). Yet some writers doubt the validity of the PTGI, claiming that the inventory measures *perceptions* of growth but not *actual* or *real* growth (e.g., Frazier et al., 2009; Hobfoll et al., 2007). In addition, there are varying results with regard to the factor structure of the PTGI (e.g., Dirik & Karanci, 2008; Levine et al., 2008). Weinrib, Rothrock, Johnsen, and Lutgendorf (2006) suggested that to ascertain if the PTGI does indeed measure the differing dimensions of posttraumatic growth that it aims to measure, qualitative studies are appropriate. Qualitative research has provided valuable information supporting the overall concept of posttraumatic growth in general (e.g., Shakespeare-Finch & Copping, 2006), but the research presented in this article is the first to extend the use of qualitative data to understand perceptions of what the PTGI is actually assessing. Therefore, the aim of the current study was to investigate how accurately the PTGI assesses posttraumatic growth by analyzing participants' interpretations of the 21 items that comprise the inventory.

METHOD

Participants

The sample comprised 14 people who had experienced a traumatic event. Although no new themes had emerged by the 11th interview, three additional

interviews were conducted to ensure theoretical saturation (Willig, 2001). There were eight males and six females interviewed ranging in age from 18 to 46 years ($M = 29$ years, $SD = 9.97$). Eight of the participants were single, five were married or in a de facto relationship, and one was separated. Participants' traumatic experiences differed, including grabbing a child under each arm to flee from the Banda Aceh tsunami and all that followed; having experienced beatings and psychological abuse at the hand of their parent, as well as sexual assault; witnessing multiple suicide attempts by a parent; being stranded on a sinking sea vessel; being attacked by their partner; living with a partner involved in the illicit drug scene; and experiencing a house fire and assault. In addition, two participants were involved in motoring accidents that resulted in death or serious injury, two suffered strokes resulting in physical incapacitation, and three had been bereaved. Traumatic experiences occurred between 6 months and 8 years prior to the interviews, and the average time since the event was 2 years.

Materials

As the aim of this research was to use qualitative data to investigate the validity of the PTGI, the instrument was used initially to measure the positive psychological changes that resulted from experiencing a traumatic event. Participants were asked to indicate the degree to which a positive change had occurred in their life as a result of their experience. Each statement used a 6-point Likert-type scale from not at all (0) to a very great degree (5), with a potential range of scores from 0–105. The PTGI consists of 21 statements with five discrete factors: relating to others, spiritual or religious changes, a renewed appreciation of life, personal strength, and new possibilities. The internal consistency of the PTGI is strong ($\alpha = .90$), and the test-retest reliability (alpha) is .71 (Tedeschi & Calhoun, 1996).

Procedure

The sampling strategy was purposive, with participants meeting strict selection criteria of having experienced a traumatic event. Following approval from the university human research ethics committee, student classes were informed about the research and the nature of a traumatic event as defined by the DSM-IV-TR (American Psychiatric Association, 2000) was explained. Participants were not remunerated. Contact details for the researchers were simply provided, and potential participants self-identified by emailing the researchers. Subsequently, a discussion regarding the nature of the traumatic experience and the potential participant's response to the experience ensued (either in person or over the phone). A final clarifying question was asked: "On a 5-point scale where 1 refers to the experience as being mildly traumatic, 2 = moderately traumatic, 3 = highly traumatic, 4 = severe, and 5 being extremely severe,

how would you rate the experience you have described?" Seven participants rated their experience as extremely severe, 5 rated their traumatic event as severe, and two said the experience was highly traumatic.

A time was then negotiated to meet for the interview and administration of the survey instrument. Following completion of the questionnaire, the participants were interviewed by the first author, the second author, or both. Participants were asked to explain their interpretation of the PTGI statements that they either heavily endorsed or did not endorse at all (e.g., "I see that you have endorsed number 1 highly, indicating that this is a change for you that occurred to a very great degree; when you read that question, what came to mind"?). The semistructured interviews were recorded and transcribed verbatim. Participants were invited to choose a pseudonym, or were given a pseudonym, to protect their anonymity.

Approach to the Analysis

As the question used was very concrete—specifically about the interpretation of the PTGI items—interview transcripts were analyzed using the principles of thematic analysis (Braun & Clarke, 2006). This approach was most relevant as the question did not stem from an epistemological or theoretical position, but rather it regarded interpretation of scale items. Thematic analysis is independent of theory and is consistent with a constructivist and essentialist paradigm (Braun & Clark, 2006). Each interview was analyzed using an idiographic and iterative approach in which, following several readings, the data were coded by the first two authors according to the emerging themes. The codes that comprised themes were clustered into one overarching or latent theme.

Thematic Analysis

An individual summary table of themes was compiled for each participant. The summary table of the first participant was used to analyze the other transcripts so that the original list of themes integrated the cases with the same codes being used; themes were elaborated on and added to until all themes were explicated. A master summary table was created from the individual summary tables in order to understand the emergent themes about the 21 statements of the PTGI. From these tables, the latent theme identified was that "questions were consistently understood." That is, the PTGI was being understood by participants in the way that the PTGI developers intended and reflected the dimensions elicited through quantitative investigations. The secondary themes that emerged from the data were that (a) following the traumatic experience, participants talked more; (b) "others" (referred to in some PTGI items) were perceived to be family/friends or those with similar experiences; (c) trauma clarified what is

important; (d) participants were closer to family; (e) participants experienced new career development; (f) trauma acted as a catalyst for action specific to the trauma, a survivor concept; (g) changes were generalized to all situations, a natural maturation; and (h) participants expressed the desire for a negatively valenced scale.

Following presentation of relevant quotes in this section, participants' individual scores on the PTGI are shown after their name. For example, a quote by the participant with the pseudonym Martina would be followed with "(Martina, PTGI 71)," showing that her PTGI score was 71.

Relationships were found between the extracted themes and the five discrete factors proposed to be tapped using the PTGI. For example, two constituent themes emerged from the statements regarding the PTGI factor relating to others: "talked more" and "others are family/friends or those with similar experiences." Participants explained that they talked more as a result of their traumatic experience to their family and friends or felt more connected to, or understanding of, those who had been through experiences similar to themselves. For example, one young man said, "I talk to my sisters about it all the time ... I feel closer to them" (Curtis, PTGI 48).

Spiritual change was not an aspect of posttraumatic growth experienced by the majority of the participants. When asked what the religiousness or spirituality statements meant to them, participants described religious faith as doctrines and specific beliefs; for example, one woman said, "Um, religious faith to me is more of, um, rules and regulations" (Olivia, PTGI 98). Spirituality was a more individual sense of connectedness with others and the world; for example: "Ah, spirituality means connecting with all that is around you to be the best person that you can be" (Lilly, PTGI 31). Some participants felt that religiousness was related to spirituality, while others felt they were different constructs entirely. This result is consistent with previous research in similar populations (Shakespeare-Finch & Morris, 2010).

Participants explained that the constituent theme "trauma clarified what is important" occurred by a comparison to others or to what could have been lost, which subsequently made the trauma survivors appreciate what they had more. Responses mimicked the PTGI appreciation of life factor. For example: "When I heard he died I was, like, I should appreciate today as I might never be there tomorrow" (Trish, PTGI 59).

The constituent theme "specific to trauma" emerged to a small degree from items tapping the factor new possibilities, but predominantly this theme developed from statements referring to the factor personal strength. The theme "survivor concept" emerged from the statements representing the factor personal strength. The theme "generalized to all situations" also emerged from two of the statements referring to personal strength, for example "been able to handle like more difficulty since then" (Peter, PTGI 57). The connection between the three constituent themes is that having survived

the traumatic event, participants felt more able to cope with future challenging situations.

The theme “negative scale” emerged from participants’ statements. Some participants reported that the traumatic experience had actually decreased certain aspects that the PTGI asked about, and these participants had rated a change on the scale trying to represent this. The constituent theme “negative scale” was predominantly seen with the statements regarding the relating to others and new possibilities factors. If a negative change had occurred, participants were expected to rate that statement as not at all applicable; however, this was not always done correctly. Some participants answered the PTGI in relation to change and then, in the interview, clarified their positive and negative changes using the small degree of change on the scale response options as negative and a great degree of change as being positive. For example: “I say it’s [ability to do better things] changed to a small degree in the negative [and] I always thought of very great degree as being a positive thing” (Jean, PTGI 61).

RESULTS

Data consisted of 14 interviews, transcribed verbatim to maintain the integrity of the information. The PTGI scores were entered and stored into SPSS (Version 17). The mean PTGI score was 57 ($SD=18$). Thematic analysis was conducted on the 14 interview transcripts. Transcripts were read repeatedly to more fully understand what was being said. Statements and concepts of interest were noted in the left margin of the transcripts, while the emerging themes were recorded in the right margin, consistent with this method. The researchers were interested in the interpretation given by participants to the PTGI items, and so this intention is evident throughout the quotes provided. However, prior to presenting the themes of this analysis, each of the 21 PTGI items is presented with typical quotes that express the ways in which participants interpreted the items. Themes are then mapped onto the five factors of the PTGI, which demonstrated consistency in how the extracted themes related to the PTGI dimensions.

Item 1: I Have Changed My Priorities About What Is Important in Life

While explaining what the first question meant to them, participants described how priorities had changed and how the trauma had clarified what was important to them, increasing their appreciation of what they had or what they could have. For example: “I think the big thing is that when you lose something you don’t realize what it is until you lose it” (Bob, PTGI 57) and “The idea of not having achieved certain things made me think oh well, OK,

I want to go and get stuck into it [life]" (Jean, PTGI 61). A renewed focus on family and wanting to do more with their lives was also endorsed by participants, as well as describing both enjoying life and being safer (e.g., decreased risky behaviors).

Item 2: I Have a Greater Appreciation for the Value of My Own Life

The theme most strongly endorsed by participants regarding Item 2 was that the trauma clarified what is important in life. The interviews captured participants' statements about their appreciation due to the realization that the balance between life and death is precarious and not something to be taken for granted. For example, "In the sense that life is too short now ... we should be enjoying life to the maximum" (Olivia, PTGI 98). The trauma was described as being thought provoking for some participants, while for others the growth change was the realization that they have some control in situations.

Item 3: I Developed New Interests

Participants specified that they responded to this statement regarding how they rated their old interests, with some strengthened and others lessened. For example: "I guess finding my old interests, now finding them trivial and, um, finding other interests that, um, that I feel are more worthy of my attention, or engaging" (Steve, PTGI 48). Such interests included learning, hobbies such as playing sport or music, or activities with their children. However, two participants stated that when answering with "not at all," what they actually meant was that their interests decreased; for example, "I kind of felt like ... my hobbies kind of drifted away" (Eve, PTGI 54).

Item 4: I Have a Greater Feeling of Self-Reliance

This was one of two items that elicited varied interpretations. For some participants, the traumatic experience had brought their latent abilities into their conscious awareness. For example: "I think I've always been self-reliant, but just the acknowledgment of it and the grasping of it probably" (Mary, PTGI 71). Other participants focused not on their abilities but on the word "feeling," for example "how I was feeling emotionally" (Eve, PTGI 54). With this question, as in the previous question, some participants stated that the traumatic event had actually decreased their feeling of self-reliance; for example, "Because of that event I thought like I couldn't really cope" (Lilly, PTGI 31). Some participants who stated that a decrease had occurred indicated on the PTGI scale that the change had not occurred at all, while others used the scale's very small degree (1) and small degree (2) options, meaning they had

changed in the negative. These different quotes show a range of views held about a single statement; though all broadly tap into what the statement was aiming to ask, responses indicated that this change could have been in either a positive or negative direction and that the inventory response format did not permit an accurate option for those who wished to express a decrease in sense of self-reliance.

Item 5: I Have a Better Understanding of Spiritual Matters

The majority of participants' understanding of Item 5 was connectedness; this included a feeling of being connected to nature, the world, and others. For instance, "I suppose a good example would be visiting, um, a new place and, um, you know whether it's going into a forest and just sitting down and, um, just listening to things, whether it's the birds chirping, [elevates] my senses of trying to figure out what's happening in my life and try and put those things together, I suppose" (Olivia, PTGI 98). Some participants included understanding others as part of their understanding of spiritual matters. This included both understanding and accepting other people's beliefs, for example "more accepting of, um, people's spiritual beliefs and how that can help them" (Martina, PTGI 71). Approximately half of the participants stated that spirituality and religiosity were related, while others stated that they were independent constructs.

Item 6: I More Clearly See That I Can Count on People in Times of Trouble

Some participants explained that during the traumatic event, they had experienced being able to rely on people; for example, "Yeah, that's just, um, kind of shows you who your good friends are, and family, the ones who you can count on" (Peter, PTGI 57). The help that participants reported was of a specific type that was needed, including instrumental and emotional support.

Item 7: I Established a New Path for My Life

Participants understood the intention of this question with some "new paths" identified that were directly related to the trauma they had experienced. For example, one woman became interested in road safety after witnessing a fatal crash, and another participant who had been a promising young elite athlete before suffering a severe physical injury stated: "I know that I can qualify for para-Olympic sport, it's sort of [a] new path I guess, yeah" (Curtis, PTGI 48). Another person unintentionally underrated the degree of change experienced when completing the inventory: "In terms of admitting to myself that I have changed my life so much, um, like it is a 5 [out of 5] but at first I don't want to think that I have because I definitely miss, I really miss an old

part of me and I really want to be able to get that back So, yeah, I guess [I] sort of was lying to myself [about the amount of change experienced]" (Jean, PTGI 61).

Item 8: I Have a Greater Sense of Closeness With Others

Some participants reported "others" as being family or friends, and other participants stated that "others" included those who either were with them during the traumatic experience or who had gone through a similar experience of their own. Participants experienced feeling closer to others by talking about the trauma; for example: "Yeah, we talked about it quite a lot" (Jake, PTGI 24). One woman found that the traumatic experience (surviving the Indian Ocean tsunami) had actually decreased her physical boundaries: "Just now I'm quite happy to stand close to a person and not feel uncomfortable" (Olivia, PTGI 98). Others found that "it didn't change as such . . . always been close to these people If anything, it maybe reinforced it" (Bob, PTGI 57).

Item 9: I Am More Willing to Express My Emotions

Participants described talking as being evidence of their willingness to express emotions. Talking more had been expressed by participants as an outcome of Item 8 (greater sense of closeness), showing the relationship between Items 8 and 9. Some participants focused on the word "willingness" and stated that because they were not expressing their emotions "willingly," they gave a lower rating than they would have if simply asked if they were expressing their emotions more.

Item 10: I Know That I Can Better Handle Difficulties

Several participants endorsed the theme "survivor concept" when responding to this item; having survived their traumatic experience showed them they were capable. For example: "Um, just I guess the things that I've been through I've managed to get through them" (Eve, PTGI 54). The following quote indicates that growth may have led to resilience. "I've been able to handle, like, more difficulty since then . . . hopefully I've learnt from what happened before" (Peter, PTGI 57). This quote also relates to the gaining of wisdom as depicted in the PTG model (Calhoun & Tedeschi, 2006).

Item 11: I Am Better Able to Accept the Way Things Worked Out

Mary (PTGI 71) held the belief that everything that happens has a meaning: "You know there aren't really any accidents. Things happen for a reason.

Teaching us something, even when they are really crap.” Bob (PTGI 57) took a more fatalistic view: “Um, but I accept that things come and go. You can’t argue with that, it’s just a fact of life.”

Item 12: I Can Better Appreciate Each Day

Participants felt that their traumatic experience had put things into perspective so they wanted to make the most of it, similar to Item 2 responses. The relationship between Items 2 and 12 is also found with the PTGI factor structure, as both questions are in the factor appreciation of life (Tedeschi & Calhoun, 1996). Two participants took the interpretation of this question further, describing how they appreciated their days, for example, they “got to experience everything and savor every day” (Jean, PTGI 61).

Item 13: New Opportunities Are Available Which Wouldn’t Have Been Otherwise

While opportunities may have been available before the trauma, some participants described how the trauma had acted as a catalyst for taking such options, for example: “The path [to a new career] has been quickened I think because of that [the trauma]” (Mary, PTGI 71). Other participants described how their trauma experience had given them a chance to reevaluate; for example, “I say it’s a chance to reevaluate where you’re at” (Bob, PTGI 57). One participant related her response with Item 3 (I developed new interests)—“[I] moved in the direction of being interested [in life]” (Martina, PTGI 71)—again conforming to the original factor structure, with Items 3 and 13 grouping together in the new possibilities dimension of the PTGI.

Item 14: I Have More Compassion for Others

This item meant a number of different things to the participants, including being thoughtful of others’ needs, having empathy, and giving instrumental and emotional help. An example of instrumental help is as follows: “If I see an old person, say if I’m staying in a hotel and they’re going down the stairs, I like go over to help them because now I realize how hard it is for them to get down the steps” (Curtis, PTGI 48). An example of emotional help given is “we ... comforted her [a fellow survivor] and, um, yeah that was good actually” (Jake, PTGI 24). As with Item 8, some participants referred to “others” as being their friends or family or as those with similar experiences who they could relate to. For example, Curtis also said: “When I think about that I think of old people, having more compassion for old people because I actually knew what it was like to be old for a time.”

Item 15: I Put More Effort Into My Relationships

The common understanding that emerged from Item 15 was participants' desire to maintain their intimate relationships, or relationships with close friends or family. An example of this maintenance is demonstrated by the following quote: "I want to put in a lot of effort to keep it [relationship]" (Eve, PTGI 54). Three participants stated that this had actually decreased; for example, "It's completely the opposite. I completely ignore basically everyone" (Montgomery, PTGI 62). Of these participants, one had endorsed the question to a very small degree, meaning that it had changed negatively; this participant had begun to answer some of the PTGI statements as whether a change had occurred or not as opposed to whether a positive change had occurred.

Item 16: I'm More Likely to Try to Change Things Which Need Changing

Participants' understanding of this item was more individual than previous questions. Some participants said that they had to instigate change to prevent a similar experience from reoccurring. Some participants reported working towards goals as a means of making change; for example "making sure that I set goals and, um, act on them" (Eve, PTGI 54). Others agreed with this statement because they felt more confident that they were now able to change things. Some participants supported the themes "survivor concept" and "trauma clarified what is important," the experience having given them the strength and clarity of knowing how and what they could change.

Item 17: I Have a Stronger Religious Faith

Participants considered this question to mean a denominational indoctrinated religious faith. A minority considered religious faith to be related to spirituality, while most thought they differed. Of the participants who reported a moderate degree of change, one reported: "I think this tested my faith a bit. But I sort of saw in the end that there's some good from it" (Peter, PTGI 57). Another participant had increased her religious readings and prayer.

Item 18: I Discovered That I'm Stronger Than I Thought I Was

Several participants said they had a sense of themselves as being more resilient in that they now felt more able to deal with future events. For example: "If it [another trauma] happens I can deal with it, since I have been able to deal with many of them [traumatic events]" (Trish, PTGI 59). Being more accepting was endorsed by one participant, referring to his understanding of

being stronger as being more accepting of how situations eventuate. While some participants related strength with Item 10 (handling difficulties) and Item 20 in that they felt stronger with others' help, other participants explained their "not at all" answers were because they were already strong; for example, "I know that I was strong enough to cope with something like this" (Lilly, PTGI 31). This demonstrates not growth but resilience, and so it was rightly not endorsed as a change on the PTGI. One participant marked his change at a great degree but, with further discussion, said that "perhaps I'm not stronger for it I want to project, not to the survey, but for myself, it's a personal thing. But, um, yeah I want to say that I'm stronger for it, but am I really, actually I don't think I am" (Jean, PTGI 61). This was the only time, on any statement, that a participant reported a response that led to an over-rating of posttraumatic growth on the PTGI.

Item 19: I Learned a Great Deal About How Wonderful People Are

Half of the participants referred to "people" in this item as being their family and friends, while the other half considered "people" as being the general population. An example of confirming this change was "I mean I've always believed that people are good, predominantly good . . . um, and so they are. You know I saw that in the, in the response that I got in that situation" (Mary, PTGI 71). Unexpected acts of kindness demonstrated the wonderfulness of people who were there for them when it was needed; for example, one woman standing on a hill waiting for the tsunami waters to subside experienced help from a stranger: "She had very, very little and yet she made sure that the children had, you know, biscuits and water, and . . . she made tea for us and it was just wonderful to see" (Olivia, PTGI 98).

Item 20: I Better Accept Needing Others

Participants reported interpreting the word "others" in this question as being family, friends, or people who understand. The change came about either out of necessity or that it's acceptable. An example of it being out of necessity is as follows: "I thought, well, you've got to rely on the rescue crews and other people" (Jake, PTGI 24). An example that needing others is acceptable is "I've realized that asking for help, it's fine" (Olivia, PTGI 98).

Item 21: I'm Able to Do Better Things With My Life

The "better things" in this statement came about by participants incorporating events and reconceptualizing what was worthwhile. A quotation optimizing the concept of having more opportunities is as follows. "And it's shown me that the way, it's not just like that [hands demonstrate a narrowed path],

but I've got an open way I can choose between things [hands open up, showing more options]" (Trish, PTGI 59). An example of how the realization occurred is "just sort of . . . almost like a wakeup call sort of thing" (Montgomery, PTGI 62).

Growth in Addition to That Captured With the PTGI

Some participants reported experiencing growth that they did not consider as being captured by the PTGI. This *extra* growth included being more giving of themselves and being more cognitively aware. Additionally, the actual process of filling in the PTGI prompted three participants to comment about how it had helped them with the rumination process. Participants answered a statement as not at all when a change had occurred temporarily—for example, "at the time, but only for a little bit" (Jake, PTGI 24)—showing how the PTGI was capturing only permanent changes as intended. Some participants occasionally answered the PTGI statements incorrectly, not marking the change that had occurred but rather where they were in relation to that statement; for example, a moderate degree was marked by Peter (PTGI 57), who said: "I was always somewhat self-reliant, so I don't think that's really changed a lot since then." This, however, happened very infrequently. One person spontaneously commented about the difficulty in differentiating a change being caused by the trauma or by natural maturation.

As noted above, some participants experienced confusion when answering the PTGI if their experience had been a negative change and not growth, and they could not report it as such on the PTGI. For example: "That question, I found that difficult . . . because it was the complete backwards Yeah. It didn't give me the option" (Jean, PTGI 61). These people suggested that the PTGI would be more accurate and easier if the scale ranged from -5 to 5, giving the option for both negative and positive changes to be recorded at the same time.

DISCUSSION

This study was conducted to investigate the content validity of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) at a level of scrutiny beyond usual psychometric properties. The method used permitted a very detailed analysis of the PTGI and undoubtedly supported that the PTGI is a valid measure of posttraumatic growth. The five discrete factors of posttraumatic growth that have been elicited using quantitative methods were expressed by participants in response to explaining what they were thinking about when answering the PTGI statements. The statements made were identified as being clumped into the factor structure of the PTGI found

by the original authors (Tedeschi & Calhoun, 1996) and confirmed by Morris et al. (2005) and Taku, Cann, et al. (2008).

Relating to others was described predominantly by trauma survivors as talking more, with "others" being family, friends, or those who have had similar experiences. The majority of the participants did not endorse spiritual change being a part of their posttraumatic growth, which has been found in previous qualitative studies with similar trauma survivor populations (e.g., Shakespeare-Finch & Copping, 2006), although participants' understanding of the statements related to spiritual or religious change was universal. Appreciation of life was explained as the trauma clarifying what was important to participants, with being closer to their family the dominant theme noted. New possibilities were created by the trauma acting as a catalyst, making a career development or new learning experience a reality. Participants referred to personal strength with three subthemes: "specific to trauma," "survivor concept," and "generalized to all situations." The majority of the participants explained that having survived a traumatic event, they felt more able to deal with future events; this process is perhaps the clearest example of the concept of posttraumatic growth and highlights the potential for such growth to be a precursor to resilience.

Temporary change was not considered to be what the PTGI statements were addressing. Participants reported that they had an intuitive sense of marking a change only when the change was permanent, again supporting the validity of the PTGI as an outcome measure. Yet, the PTGI did not capture all aspects of posttraumatic growth, with participants reporting complex growth experiences that are not easily measured by inventories, as has been found in previous research (e.g., Shakespeare-Finch & Copping, 2006).

Two main differences were found in this study regarding participants' interpretation of the PTGI. First, the word "feeling" in Item 4 was highlighted by some participants rating whether they "felt" self-reliant and others rating whether they "were" self-reliant. Second, the word "others" was interpreted by some participants as referring to friends and/or family and by some as meaning those who had a similar experience that they could relate to. These slight differences in some participants' understanding of the PTGI still resounded in the concept of capturing posttraumatic growth.

When considering the results, a number of design elements pertaining to this study must be taken into account, as they may have had an influence on participants' responses. First, trauma survivors self-selected to be participants, so it is unknown how trauma survivors who were not willing to talk about their experiences would have interpreted the PTGI. Second, two researchers were present for half of the participant interviews, while one researcher conducted the remaining interviews. Both interviewers were present to initially train the newer researcher and to solidify the understanding of the interview structures. Researcher effects, with both interviewers being female, may have influenced how comfortable participants felt disclosing

their thought processes, depending on the trauma they experienced. However, all participants conversed openly, and there was no evidence that they were unwilling to be open and honest in their responses. The researchers' interpretation of trauma survivors' understanding of the PTGI was subjective due to the nature of the analysis (Braun & Clarke, 2006), but the consistency in responses and the relationship between extracted themes and the PTGI factors lends a confirmatory element.

Another potential limitation of the research was that it was conducted in a Western nation where English is the first language and all participants were "native" English speakers. However, interpretation of items may have been different if the PTGI was administered through a translator to a non-English-speaking participant or a person who spoke English as a second or third language and was from a different cultural upbringing. Evidence of such differences has been found in previous research; for example, in a large cross-national study by McCrae and Terracciano (2005), the word "warm" was seen in some cultures as meaning friendly and in others as being an indication of temperature.

Some participants reported having experienced multiple traumas. In this research, participants were asked to answer the PTGI keeping in mind the traumatic experience that had the most impact on them (Forstmeier, Spitzer, & Maercker, 2009). Using the most impacting traumatic experience works on the premise that posttraumatic growth is more likely to occur the more deficiencies are found in resources and previously held beliefs or schemas (Calhoun & Tedeschi, 2006). Higher levels of posttraumatic growth experienced allow for more of the PTGI to be utilized in assessing the differing areas of growth.

Posttraumatic growth is a complex phenomenon experienced and expressed in different forms, as shown by the trauma survivors in this research. Previous research has found that the time since the trauma was experienced had no correlation to the amount of posttraumatic growth (Morris et al., 2005). This was also seen with participant data in the current research, with the time since the trauma was experienced being unrelated to PTGI scores. The individuality of experiences was also supported by the findings from this research, with some participants reporting growth occurring after a few weeks of their traumatic experience and others only experiencing posttraumatic growth several years after their trauma.

Research Implications

Research in the field of posttraumatic growth will benefit from being able to continue using the PTGI with the added assurance that it has been found to have good content validity through our alternative qualitative approach to assessing validity. The PTGI was found to be valid in terms of the current scale content, but some participants stated that they had experienced a change in the negative sense, that they actually experienced decreases with respect

to some of the statements of the PTGI and wanted to express this when rating the individual items. There is a 42-item version of the PTGI (Baker, Kelly, Calhoun, Cann, & Tedeschi, 2008; Cann, Calhoun, Tedeschi, & Solomon, 2010) that measures both posttraumatic growth and posttraumatic depreciation. The PTGI-42 contains the same 21 statements from the PTGI, but they are replicated and worded negatively (e.g., "I appreciate each day less") to measure posttraumatic depreciation (Cann et al., 2010). The PTGI-42 allows more understanding of changes, with both growth and depreciation being measured in the same statements, and avoids the potential difficulty of using a bipolar response format that does not allow respondents to indicate that they may have experienced both positive and negative changes in the area referred to in the items. However, respondents tend to describe very few negative changes as compared to positive ones, and using the additional 21 negatively worded items that constitute the "depreciation" aspect of the scale may not be necessary in many contexts (Baker et al., 2008; Cann et al., 2010).

Conclusion

In conclusion, the PTGI was found to be a valid measure of posttraumatic growth. Participants who had experienced traumatic events reported the discrete factors of relating to others, spiritual change, appreciation of life, new possibilities, and personal strength in their interpretation of the PTGI statements. Understanding of the PTGI statements did not appear to be dependent on participants experiencing growth in the statement areas. The participants' understanding was related to, and tapped into, the concept of posttraumatic growth. Studies such as this add to the growing body of research that not only attests to PTG being a real outcome for some people, but that it is an outcome that can be articulated and measured. Experiencing PTG is not void of ongoing distress for some and is also a process by which to develop resilience and wisdom and create meaning. This is a necessary area to continue exploring and disseminating the knowledge found so that attention to the possibility of PTG can be included within a therapeutic context facilitated through the education of practitioners, academics, students, and the broader community.

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Jane Shakespeare-Finch is an associate professor in psychology and counseling at the Queensland University of Technology, Brisbane, Australia. She teaches health psychology, individual differences, and assessment, and her research focus is on the promotion of resilience and posttraumatic growth.

Emma Martinek is a psychologist currently working in Queensland's Department of Communities, Child Safety and Disability Services. Her honors thesis was a qualitative study investigating the validity of the Posttraumatic Growth Inventory.

Richard G. Tedeschi is a professor of psychology at the University of North Carolina at Charlotte. He is a licensed psychologist focusing his research and practice on bereavement, trauma, and posttraumatic growth. He serves as consultant to the American Psychological Association on trauma and resilience.

Lawrence G. Calhoun is a professor of psychology at the University of North Carolina at Charlotte and a licensed psychologist. His scholarly work is focused on reactions to major life crises, particularly the phenomenon of posttraumatic growth.

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