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## A Mixed-Method Analysis of Posttrauma Outcomes: Trauma Severity and Social Support from a Psychotherapeutic Perspective

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Murray Rieck

*Queensland University of Technology*

Jane Shakespeare-Finch

*University of Tasmania and Queensland University of Technology*

Bronwyn Morris and Jasmin Newbery

*Queensland University of Technology*

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### ABSTRACT

Although research has focused on the difficulties faced in adapting to life following the experiences of a traumatic event, limited research has examined positive legacies of incorporating a traumatic experience into life posttrauma. This study uses quantitative and qualitative data ( $N = 218$ ) to examine the effect that trauma severity and social support have on posttrauma outcomes. Individuals' perceptions of their traumatic experiences and the social support they received were significant influences posttrauma. The knowledge gained has practical applications for therapy and the client/counsellor relationship in terms of counselling and facilitating personal growth after trauma.

### RÉSUMÉ

Bien que l'ensemble des recherches sur le traumatisme se soit concentrée sur les difficultés rencontrées dans l'adaptation à la vie après ces expériences, certaines ont étudié l'héritage positif que constitue l'incorporation d'une expérience traumatisante dans la vie après le traumatisme. Cette étude utilise des données quantitatives et qualitatives ( $N = 218$ ) pour examiner l'effet de la gravité du traumatisme et du soutien social sur les résultats post-traumatiques. Les perceptions qu'ont les individus de leurs expériences traumatisantes et du soutien social reçu ont influencé de façon importante la période post-traumatique. Les connaissances acquises ont des applications pratiques en thérapie et dans la relation client-conseiller aux plans du counseling et de la facilitation de la croissance personnelle après le traumatisme.

People's experiences of trauma may not only consist of negative and maladaptive outcomes, but also reveal an encouraging legacy of personal growth, healing, and integration of other life dynamics (Solomon, Waysman, Neria, & Ohry, 1999). This latter concept of Posttraumatic Growth (Tedeschi & Calhoun, 1995) may co-exist with the deprivational symptomology (e.g., Posttraumatic Stress Disorder; PTSD), which has significant implications for professionals working with those who have endured a significant trauma in their lives (e.g., Tedeschi, Park, & Calhoun, 1998; Zautra, Reich, Davis, Potter, & Nicolson, 2000). In the current research, we use quantitative and qualitative methods to investigate trauma outcomes in terms of the traumatic experience and in terms of a person's

perceptions of social support at the time, using a student population. The study aims to confirm that negative responses and positive outcomes of a traumatic experience co-exist. Additionally, the research examines variance in posttrauma outcome measures as a function of an individual's subjective perceptions of the severity of their experience, and as a function of the research team's rating of the participant's trauma severity.

### *Two Paradigms of Trauma*

According to the American Psychiatric Association (APA), a traumatic event is one in which a person endured (or witnessed) an event that was perceived to be sudden or overwhelming, and that the event was responded to with fear, horror, or helplessness (APA, 2000). An individual may respond to a traumatic event with a range of symptoms that can be grouped into re-experiencing the event (such as flashbacks and nightmares), avoidance and numbing of emotions (e.g., flat affect and detachment from others), and increased arousal (i.e., insomnia, hypervigilance) (APA). These aspects of the traditional pathogenic model of trauma focus on practitioners measuring and treating the constant, symptomatic "sickness" of events that are considered, by those who experience them, as traumatic (Stuhlmiller & Dunning, 2000).

In contrast, the more positive and optimistic view of trauma encompasses the salutogenic paradigm where traumatic experiences provide a catalyst for the development of deeper meaning and personal growth in one's life. Tedeschi and Calhoun (1995) coined this positive phenomenon "Posttraumatic Growth" (PTG) and argue that as a consequence of the struggle to integrate a traumatic experience into life following such an event, people may perceive enhanced relationships, foster more personal strength, open up new possibilities of experience, promote a new appreciation of life, and experience heightened spirituality and/or religious beliefs.

### *A Synopsis of How People Grow after Trauma*

Ruminations seem to play a vital role in adaptation to life after trauma (Calhoun & Tedeschi, 1998, p. 221) and are therefore a pivotal component of the model of PTG. To begin, an individual experiences frequent and intense posttraumatic cognitions (e.g., intrusive thoughts, nightmares), an interaction occurs with feelings (i.e., fear, guilt), and an attempt is made by the person to comprehend and cope with the event(s) (Tedeschi & Calhoun, 2003). Consequently, one may develop new positive ruminations about the self, higher-order goals and schemas, and significant elements of personal growth. So PTG outcomes occur from the "shattering" of basic assumptions (Janoff-Bulman, 1992) and the individual's personal struggle to overcome adversity in times of crisis, which often produces profound elements of strength and endurance (Tedeschi & Calhoun, 1996; Tedeschi et al., 1998). That is, negative responses to trauma seem to integrate into one's perceptions and life context, providing a potential channel for the development of intensely positive changes. This process may in-

fluence a new and deeper positive meaning of the self, interpersonal relationships, and life philosophy after a traumatic experience (Tedeschi & Calhoun, 1996).

### *Trauma Severity and the Coexistence of Negative and Positive Outcomes*

People's perceptions of the severity of the traumatic event have been found to contribute to trauma outcomes. In a study of Bosnian refugees (Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003), the Posttraumatic Growth Inventory (PTGI) measured high levels of PTG in individuals reporting severe trauma. In another empirical study, Polatinsky and Esprey (2000) found growth in a sample of parents dealing with the trauma of losing a child. Solomon et al. (1999) found evidence to support the co-existence of these phenomena in a study of Israeli former prisoners of war. They used the PTSD Inventory (APA, 1987, as cited in Solomon et al.) to measure high levels of negative responses (e.g., nightmares, hyperarousal) to intense war situations including physical abuse, interrogation, and humiliation. Through the use of a structured self-report questionnaire (Sledge, Boydston, & Rahe, 1980), evidence was found for both positive and negative paradigms, although the deprivational symptomology was clearly more significant. This adds further credence to the suggestion that certain event dynamics (e.g., perceived severity) integrate to affect both the deprivational and optimistic consequences of a traumatic experience.

### *Social Support Following Crises*

Social support (either formally provided by a health care professional and/or informal, e.g., from family or friends) is asserted to enhance one's ability to cope with trauma and contribute positively to negative outcomes and personal growth after enduring an experience that has been perceived as traumatic, including situations such as coping with HIV (Schaefer & Moos, 1998), cancer (Snodgrass, 1998), and war (Solomon et al., 1999). In a personal story of "recruiting" lost friends and adjusting to the news that she had breast cancer, Snodgrass recollects more than 200 contacts she had while in hospital. She suggests that the informal support she received significantly provided the inspiration not only to survive, but also to continue her teaching career and personal life, despite the pain and negative effects of chemotherapy after major surgery.

It could be argued that recent terrorist disasters have adequately tested the socially supportive community spirit in times of trauma. The television footage of grieving Americans paying their respects at various "shrines" near the World Trade Center site (Conran, 2002) is an appropriate example, as total strangers, numb with grief, naturally formed supportive networks to cope with the initial trauma. Catherall (2002) exemplifies his experience associated with the assassination of President John F. Kennedy, and the "power of community" that is displayed after people come to witness evil and horror. So it seems that a unique bond of humankind exists to facilitate social networks in times of adversity. Support systems were also found to be significant influences on personal growth in a

qualitative study of families of American murder victims (Asaro, 2001). The significant influences here were both formal (e.g., group therapy) and informal family support (such as the spouse) and peer support groups—the seeking of comfort from other families who had endured the same fate.

### *Hypotheses*

Hypothesis 1 predicts the co-existence of deprivational and positive changes posttrauma. It is asserted that a positive correlation will be found between the Impact of Event Scale–Revised (IES-R; Weiss & Marmar, 1997) and the PTGI.

Hypothesis 2 proposes that students' perceptions of their traumatic experiences are related to PTG. That is, it is expected that one's reported level of PTG will increase simultaneously with their perceived level of trauma severity (2a), and the research team's independent ratings of participant's trauma severity (2b).

The literature has reported that social support is a significant factor in personal growth in many instances of trauma and of severe stress including grief, physical injuries and illness, terrorism, and disasters. Hence, Hypothesis 3 proposes that students' perceived levels of social support (emotional and practical help) at the time of the traumatic event they perceived to have endured will be positively correlated with scores on the PTGI.

## METHOD

### *Participants*

Undergraduate students at the Queensland University of Technology were invited to voluntarily participate in the current study. A sample of 218 university students participated, which comprised 188 females (86.2%) and 30 males (13.8%). This difference in gender distribution is typical in the course types approached for participation (e.g., undergraduate psychology and arts). The age of participants ranged from 16 to 58 years ( $M = 24.8$ ,  $SD = 8.7$ ), although 70.8% were between 16 and 26 years of age. It was a condition of participation that respondents had endured (or witnessed) a traumatic event that participants believed to meet the APA definition. That is, the event was viewed as sudden or overwhelming, and was responded to with fear, horror, or helplessness (APA, 2000).

### *Materials*

This study used a cross-sectional survey design. The materials used in the survey included a consent form, a section which captured data about the traumatic experience itself, and a brief battery of three questionnaires.

*Traumatic experience data.* The first section asked participants for a brief description of the traumatic experience, and their subjective rating of trauma severity on a 5-point Likert-type scale (1 = mildly traumatic to 5 = very severely traumatic). The team of four researchers individually reviewed each survey and allocated a rating to the experiences described by participants. That is, the re-

searchers independently rated the severity of the trauma that was described. Means for each survey were used to account for disparities between researcher scores. Participants were asked to share further qualitative data about their experiences in the form of an open-ended question in this first section of the survey, and again invited to add further comments at the conclusion to the survey.

*Impact of Event Scale–Revised.* The IES-R (Weiss & Marmar, 1997) was used to measure the negative or deprivational consequences of trauma. This 22-item scale consists of declarative statements that assess traumatic symptomology corresponding to *Diagnostic and Statistical Manual of Mental Disorders–Fourth Edition* (DSM-IV) criteria, such as Intrusion, Avoidance, and Hyperarousal (Carlson, 1997), adding the latter dimension (Hyperarousal) to the original Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979). Respondents were asked to rate statements (e.g., “My feelings about it were kind of numb”) that measure the distress experienced by the described event on a 5-point Likert scale. Scores for the Avoidance, Intrusion, and Hyperarousal factors on the IES-R are calculated by averaging the ratings for each subscale, and the total IES-R score is the sum of those three subscale means (Hutchings & Devilly, 2001). Reliability scores for this scale have been found to be consistent in many studies and across cultures,  $\alpha = .71$  to  $\alpha = .93$ , (e.g., Brunet, St-Hilaire, Jehel, & King, 2003; Inamoto et al., 2002; Weiss & Marmar; Wu & Chan, 2003), which is indicative of the robustness of the scale.

*Posttraumatic Growth Inventory.* In contrast to the IES-R, the PTGI measures the positive and optimistic paradigm of a student’s traumatic experience. Tedeschi and Calhoun (1996) categorized 21 items into five factorial outcomes of PTG, namely Relating to Others, Personal Strength, New Possibilities, Appreciation of Life, and Spiritual Changes. Participants rated these on a 6-point Likert scale, where 0 represented “not at all” and 5 a “very great degree.” Scoring for each factor on the PTGI is the sum of the corresponding items, and the total score is the sum of the scores for all five factors. Overall reliability scores for this scale are high at  $\alpha = .93$ , and the five-factor solution consistency ranges between  $\alpha = .77$  to  $\alpha = .88$  (Shakespeare-Finch, Smith, Gow, Embelton, & Baird, 2003; Tedeschi & Calhoun, 1996). Clearly, this scale is a relatively new measure of positive posttrauma outcomes, but these alphas are indicative of good internal consistency, which adds to the reliability of the PTGI measure.

*Social Support for Trauma Scale.* The final part of the survey was the Social Support for Trauma Scale (SSTS). Researchers of the current study constructed this tool after an extensive search of existing surveys found them to be orientated toward studies of community or social psychology, and therefore not specific enough for an investigation of trauma. Our SSTS captured data more consistent with a traumatic experience, and consists of 14 items with approximately equal numbers of bi-directionally valenced statements. It was intended to measure an individual’s perceived social support at the time of the trauma in terms of emotional needs, such as “I received love and affection from significant others,” and practical help, like “Some family and friends offered to help me with domestic tasks.” Response

rating choices for the SSTS were identical to that of the PTGI. This scale is scored as the sum of all items. The internal reliability data generated from this sample are presented in the results section of this article.

*Procedure*

The research team recruited participants from six undergraduate classes across three university campuses. Due to the selection criteria previously described, a verbal presentation was made to potential participants that included the APA definition of a trauma. Without being too prescriptive so as not to bias results, researchers indicated that the study was examining factors that contribute to outcomes attributed to their traumatic experience.

RESULTS

*Reliability*

Internal consistency in the current study provided high coefficients using Cronbach's alpha. Reliabilities for the IES-R factors ranged from  $\alpha = .86$  to  $\alpha = .82$ , and the overall scale produced an alpha coefficient of  $\alpha = .92$ . The PTGI reliabilities were slightly lower than for the IES-R factors,  $\alpha = .93$  to  $\alpha = .77$ , and .93 for the total scale. An analysis of internal consistency of the SSTS found moderate reliability, with values between  $\alpha = .86$  and  $\alpha = .74$ . Descriptive data for the three scales are presented in Table 1.

Table 1  
*Cronbach's Alpha Reliability Coefficients for the IES-R, PTGI, & SSTS*

Scale	Factor	Alpha Coefficient
IES-R		.92
	Intrusions	.86
	Hyperarousal	.84
	Avoidance	.82
PTGI		.93
	Spiritual change	.93
	New possibilities	.88
	Relating to others	.85
	Appreciation of life	.82
	Personal strength	.77
SSTS		.86
	Emotional support	.80
	Practical help	.74

*Qualitative Data*

Participants were invited to provide qualitative data twice in the survey. First, a brief explanation of their experience was requested early in the trauma demographic section, and another opportunity was provided for comments in conclu-

sion to the brief battery of tests. This was added to provide researchers with some insight into the types of traumas experienced, along with other information (e.g., feelings, outcomes) that participants chose to share (Hayes, 1997). Data were compared for similarities, grouped, and coded into categories that were considered well represented amongst participants (Strauss & Corbin, 1998). A broad range of trauma experiences was reported, and those categories of trauma that account for more than 2% of the sample are identified in descending order in Table 2.

Table 2  
*Qualitative Data for Categories of Traumas Experienced by University Students*

Trauma Type	Number of Participants	Percentage of Participants
Death of significant other	72	33
Sexual assault	26	11.8
Motor-vehicle accidents (including pedestrians)	24	11
Life threats and violence (non-sexual)	14	6.4
Serious illness to self	13	6
Suicide of secondary family or friend	12	5.5
Natural disaster	4	2
Other traumatic experience	53	24.3

Fifty-six percent of the sample reported as their primary trauma either the death of a close family member or friend (33%), sexual abuse or assault (11.8%), or some personal involvement in a motor vehicle accident (11%). One-third (8) of the motor vehicle accident subsample said that a death was involved, bringing the total of reported experiences involving death to 88 (40%). This figure is likely to be an underestimate, as many respondents did not mention death when describing experiences that are sometimes consistent with fatal consequences. That is, sometimes participants simply stated that the event involved "war" or "disaster" and did not specify the nature of the event beyond those categories. For the "life threats and violence" subsample, 4 of the 14 respondents (29%) reported that they were involved in an armed robbery situation, such as witnessing a bank hold-up or 24-hour-store robbery. Other accounts of students' trauma included abortion, mental illness, relationship breakdown and divorce, natural disasters, critical incident response of an emergency service worker, personal failure, and exposure to phobias. While this list is not exhaustive, it exemplifies well the broadness of the sample in terms of different types of events that provoked a traumatic response in participants.

Demographic variables were also tested in order to ascertain if they had a differential impact on levels of PTG or IES-R symptoms. There were no differences between males and females ( $t(217) = -1.85, p = ns$ ), or in the time since the trauma had occurred ( $r = -.13$  for time since trauma and PTGI scores;  $r =$

.004 for time and IES-R scores). A one-way analysis of variance (ANOVA) showed that PTGI did not differ as a function of relationship status ( $F(4, 213) = 1.52, p = ns$ ) or as a function of ethnicity ( $F(8, 209) = 1.68, p = ns$ ).

In line with previous theories of the co-existence of optimistic outcomes and deprivational symptoms, qualitative descriptions and comments clearly indicated both negative responses and positive outcomes. Some of the data from the deprivational model included very personal testimonies of grief, fear, guilt, anxiety, and devastation, such as the “suicide of my girlfriend after an argument ... profound experience of guilt, depression, and self-blame.” In contrast, expressions of optimism and positive outcomes more aligned to the PTG model were also evident, such as “my family are excellent—the best; now happier in my life than ever before ... the event is the reason for study and enjoying life more.”

*Hypothesis Testing*

To test Hypothesis 1, a correlation coefficient was computed to examine the potential positive relationship between the IES-R (measuring the negative responses to trauma) and the PTGI (which taps positive outcomes). A correlation matrix (see Table 3) confirms that a significant, yet modest, positive correlation existed in the data.

Table 3  
*Correlation Matrix for IES-R, PTGI, SSTS, Subjective and Objective Trauma Severity Ratings*

Variable	IES-R	PTGI	SSTS	STR	OTR
IES-R	1.00				
PTGI-R	.36**	1.00			
SSTS	-.25**	.37**	1.00		
STR	.52**	.36**	-.11	1.00	
OTR	.33**	.14*	-.09	.49**	1.00

Notes.  $p < .05 = *$ ,  $p < .01 = **$ , Subjective Trauma Rating = STR, Objective Trauma Rating = OTR.

Hypothesis 2a asserted that a positive correlation exists between students’ own perceptions of the severity of their traumatic experiences and their scores on the PTGI. As expected, a significant positive correlation was found, suggesting that one’s subjective reality (perception of the severity of their own experience) may be linked to perceptions of growth from the experience. On the objective measure of trauma severity (Hypthesis 2b), a positive correlation was also significant. Clearly, a higher coefficient was indicated for one’s own perception of trauma severity than for the research team’s objective measures. A moderate positive correlation also existed between objective scores and students’ subjective perceptions of severity.

A correlation coefficient was also conducted between students’ perceptions of social support received at the time of their traumatic experience and their scores

on the PTGI (Hypothesis 3). A significant positive correlation was found, and, as may be expected, a significant negative relationship was found between scores on the SSTS and the IES-R.

## DISCUSSION

### *The Co-existence of Negative and Positive Outcomes*

The results were consistent with predictions that negative and positive outcomes of trauma coexist. This study suggests that the struggle and endurance of trauma survival does seem to produce positive and optimistic outcomes that enhance personal well-being in some people, despite the possibility of persistent negative symptomology. When traumatized students scored for negative responses to an event, correlating scores were also found for the positive outcomes, which clearly supports the coexistence model (Solomon et al., 1999). This finding does not support alternative plausible explanations for the positive legacy of trauma, such as the use of denial as a coping mechanism. Although it is feasible that an individual might identify with positive statements to deny negative consequences of a crisis, the reporting of both negative and positive outcomes makes this unlikely. Indeed, for subjective measures of severity, students reported higher correlations for the negative responses than for positive outcomes of their traumatic experiences. This suggests that students perceive that they remain notably affected by the deprivational symptoms, while outcomes of PTG also exist.

Qualitative results were also consistent with the coexistence theory. For example, one participant wrote about the trauma associated with the loss of her baby in a third world country due to a genetic illness, "We were devastated ... not a moment goes by without thinking about my baby." Now back home in Australia, she faces the loss of her third child to the same illness. In speaking in terms of the family unit, she goes on to say that they have lived for every moment, "[E]ach and every day, we celebrate each others' life." Many examples demonstrated both deprivational and optimistic outcomes of trauma, such as this case that strongly exemplifies the appreciation of life and closer relationships factors of PTG.

### *The Traumatic Experience*

The proposed associations between trauma severity and PTG were consistent with previous findings (e.g., Polatinsky & Esprey, 2000; Powell et al., 2003). Significant results on both students' subjective severity ratings and the research team's objective assessments indicate that trauma severity does play a part in the development of PTG. The higher reported ratings of trauma severity are related to elevated PTG levels. Perhaps this indicates that the difficulty of the personal struggle that is endured to overcome adversity in a time of crisis is predictive of PTG. Based on the results of the current study, this appears to be a worthwhile area for future research that may employ higher levels of methodological con-

straint. The cognitive adjustments, such as the “shattering” of one’s previous assumptions (Janoff-Bulman, 1992) that are argued to be necessary to change a person’s life, seem to be contingent on the seriousness of the trauma and how the individual responds to it. Many factors may contribute to this, such as how people think (e.g., how individuals frame their whole-of-life context), how they process information (i.e., logically and coherently), or personality dispositions such as optimism and pessimism. The current results conclude that the effect that trauma has on the development of PTG has a highly subjective element.

Undergraduates’ subjective perceptions of the severity of their traumatic experiences were a more significant predictor of PTG than the research team’s objective scores. An individual’s own processing and beliefs about the traumatic event, which is also determined by other potential cumulative stressors or positive influences, produces a net outcome of deprivation and growth at a given time during one’s life. It may be that these other unknown elements account for the positive correlation between subjective perceptions and the research team’s objective rating of the events described. Results also indicated higher positive associations for subjective data in comparison to objective severity ratings, in terms of the negative consequences of trauma (IES-R) and the social support (SSTS) received at the time of the event.

One explanation for the distinction between subjective and objective appraisals is one’s rumination and the deeper philosophical meanings of their trauma. An individual’s intense thinking (sometimes intrusively) about his or her experience seems to contribute to the process of PTG development (Tedeschi & Calhoun, 2003). These ruminations may interact with other cognitions, including the deeper and philosophical meanings with which we identify (Bracken, 2002). Personal attributes like our culture, religion, and social values integrate with thoughts to produce co-existing but discretely diverse outcomes, such as those that produce fragilities and anxieties (negative ruminations) and those that construct a profound unlocking of personal existence to cope with, make sense of, and grow from crises (Bracken). These concepts are exemplified in the current research by qualitative comments such as “I found God” or “Looking for meaning (of the experience); might turn to Buddhism.”

### *Social Support*

As proposed, the emotional and practical support that one receives at the time of an event was found to be positively related to PTG in this research. The emotional support factor might help to develop PTG in terms of basic counselling effects as it does with other problematic issues (Geldard & Geldard, 2001). That is, talking through emotional issues with another person often empowers one to manage difficult situations and solve problems. An old adage declares that a problem shared is a problem halved. The progression of support from significant others may in turn enhance intimacy between them and therefore provide a boost for PTG factors such as appreciation of others and the development of closer relationships. It follows that if one receives support from another, then the provider

is appreciated and relationships become more intimate. In existential terms, Bracken (2002) proposes that strong supportive networks that possess a sense of togetherness help individuals to make some meaning of their traumatic experience. Students' qualitative responses indicated mainly positive perceptions of social support (e.g., "my family are the best," "best friend stood by me through it all"); however, others recalled non-supportive networks ("no-one cares, everything leads to pain"). Indeed, some participants reported destructive relationships, such as one spouse's personal description of the use of firearms to ensure domestic compliance ("never a mark, a bruise, or witness ... just his word against my word ... too scared to tell anyone, too scared to leave"). Similar to the emotional support factor, the practical help aspect also incorporates a caring dimension, and allows an individual to rest and recuperate if a friend helps with chores (e.g., makes a meal or mows the lawn).

### *Strengths and Limitations*

Both the negative and positive paradigms of trauma were measured using established assessment tools (e.g., IES-R, PTGI) and qualitative responses, hence a complete array of data outcomes and responses from students' traumatic experiences were obtained. As the SSTS is a newly constructed scale for samples involving trauma, its efficacy is not yet demonstrated. More studies using this scale would contribute to a better assessment of its effectiveness, although reliability alphas were found to be adequate. Indeed, reliability testing across all scales and factors in the current study provided good measures of internal consistency. The sample is also a strength of this study, with a good number of participants, variability of levels of trauma severity, and a variety of experiences that composed the reported traumatic responses. While the age range of the sample was sufficient for the hypotheses tested, the dispersion was limited, as might be expected for a sample of university students. A potential limitation for the current sample was an imbalance of gender, with significantly more females than males. However, results demonstrated that there were no differences in levels of posttrauma outcome as a consequence of being male or female. Further, there were no differences in positive or negative outcomes as a result of the time that had passed since the trauma occurred.

The overall design of the current study has strengths and limitations. It could be argued that results from studies in which participants are self-selected may not be an accurate representation of the population in general. Additionally, retrospective studies are restricted in terms of an individual's memory and perceptions of past events. Indeed, it could be suggested that memory (van der Kolk, 1996) and cognitions (Janoff-Bulman, 1992) are often disturbed following significant traumas. However, the importance of accepting participants' subjective perceptions of their traumatic experiences has already been discussed. The inclusion of a control or "non-trauma" sample may have presented the research team with a baseline to compare with the "trauma" group. This would help to contrast naturally occurring, non-trauma-related personal growth influences from

within the data (e.g., wisdom) and therefore strengthen findings. A longitudinal study would have investigated perceptions of posttrauma changes over time (Shaughnessy & Zechmeister, 1997); however, difficulties arise in finding a homogeneous population prior to their trauma, and therefore the full picture of trauma outcomes.

### *Implications and Applications*

Current global trends exemplify the relevance of trauma to counselling psychologists, such as child abuse in church settings, terrorism in New York and Bali, wars in Iraq and Afghanistan, and the development of new chemical and viral health risks. This research has highlighted opportunities for therapists to not only promote competence and empower people to walk through the struggle of trauma, but to actively facilitate and bring out the positive and optimistic growth outcomes. Most counselling backgrounds emphasize skills and competencies for coping and personal development (Geldard & Geldard, 2001). For example, a narrative therapist might investigate these strengths and help the client to connect with them through significant others or life events. This does not mean that a client's negative symptomology should be ignored now that PTG has been identified in another study; moreover, the intrusions, avoidance, and hyperarousal should be acknowledged and managed as appropriate (e.g., cognitive-behavioural therapy). The findings of PTG do, however, present an excellent opportunity for helping people to move on, and in some cases even facilitate closure through processes such as the recognition that one has survived such a challenge rather than fallen victim to it. Similarly, basic treatment includes counsellors helping individuals to facilitate supportive frameworks in their lives. With permission, the involvement of significant others in basic but holistic education of how to help outside the therapy room may enhance social support and thus increase clients' levels of personal growth.

There are also challenges here for the counselling relationship. Findings highlight the need for the therapist to take the client's lead, and paraphrase and develop a language of optimism and growth, rather than ruminating on the deprivational outcomes alone. Similarly, a therapist who has an understanding and acceptance of the nature of PTG and an optimistic attitude toward trauma, may also join in a more positive client relationship (Geldard & Geldard, 2001), and therefore better facilitate outcomes of personal growth. In support of this, Miller, Duncan, and Hubble (1997) found the therapeutic relationship to account for more than 35% of the variance of efficacy in counselling. Another client relationship implication of this research is the historically established Rogerian humanist theory of subjective reality as a basis to therapy (Hjelle & Ziegler, 1992). Subjective beliefs of one's trauma were more apparent than the systematic objective assessment in the current study. Clearly, assessments and treatments should address the holistic perceptions of the person and his or her environment (Carlson, 1997), where many facets integrate to create the perceptual reality; a reality that does not remain static.

### *Future Directions*

The present study has highlighted other design options areas for future research. Studies may examine the lifelong dynamics of trauma and PTG, providing key data in terms of the reduction of negative trauma outcomes and the manifestation of growth. A longitudinal study may identify significant times, ages, or events (subsequent to the trauma) that promote PTG. For cross-sectional designs, a non-trauma control group should identify elements of PTG that do not occur following a traumatic experience, thus enhancing the validity of results. Given that an individual's subjective reality is significant in trauma, qualitative methods may identify the deeper personal meanings and more succinct predictors of posttrauma outcomes that are more difficult to measure scientifically, like an individual's feelings, emotions, and beliefs about their experience. Further investigations of social support as a mediating role between the clients' subjective trauma severity and PTG will add considerable value to the study of positive trauma outcomes. Future research might compare the social support factor as a mediator for both personal growth and the reduction of posttraumatic stress symptoms. In terms of scales used for the current study, the research team developed the SSTS, and consequently it may be useful to examine the emotional and practical help dimensions of the scale.

### CONCLUSION

The current research has contributed to the scarce empirical literature that examines both negative and PTG outcomes from trauma. It is evident that PTG not only occurs in individuals, but also co-exists as a consequence of the deprivational outcomes of an individual's traumatic experience. This study also found that individuals' perceptions of the severity of their traumatic experiences, the research team's ratings of severity, and social support received at the time differentiated between reported levels of PTG and deprivational outcomes. Ruminations and philosophical meanings may play a key role in the results. The way people think and frame the experience in a dynamic whole of life context explains well how PTG might develop from the tested variables in the current study. This empirical research, which is well supported by qualitative data, will significantly add to the paucity of knowledge about PTG and its development from the negative and often maladaptive responses to a traumatic experience. Moreover, the current study contributes to the generalizable body of knowledge of traumatology, and enhances our understanding of some of the influences of PTG in Australia.

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### *About the Authors*

Murray Rieck is a paramedic and counsellor with the Queensland Ambulance Service, and has a keen interest in trauma and coping in emergency service personnel. He is also involved in the education of paramedics, and lectures about stress in the workplace, staff support services, psycho-social issues, and loss and grief.

Dr. Jane Shakespeare-Finch is a lecturer at the University of Tasmania, teaching psychological research methods, counselling, and health psychology. Research interests include posttraumatic growth, cross-cultural notions of personality, and processes of adaptation in populations as diverse as police officers and African refugees.

Bronwyn Morris is a researcher in the genetic epidemiology department at the Queensland Institute of Medical Research. Bronwyn studies the psychological and physical health of twins, specifically looking at phenomena such as anxiety, depression, and suicide.

Jasmin Newbery (a registered psychologist) works with Disability Services Queensland where her primary role is in the assessment and implementation of behavioural programs to intellectually and physically impaired adults. Her special interests are in education and developmental psychology.

*Note:* All authors are affiliated with the Queensland University of Technology, and Dr Shakespeare-Finch is now also affiliated with the University of Tasmania.

Address correspondence to Murray Rieck, 82 Highfield Rise, Pomona, Queensland, Australia, 4568, e-mail <murrayrieck@bigpond.com>, or Dr. Jane Shakespeare-Finch, University of Tasmania, Locked Bag 1342, Launceston, TAS, 7250, Australia, e-mail <Jane.ShakespeareFinch@utas.edu.au>.