Examining the Relationship Between Resilience and Posttraumatic Growth

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To extend the literature the present study aims to examine the interrelationships between resilience (defined by a lack of posttraumatic stress disorder following trauma) and posttraumatic growth. Two studies were conducted of Israeli: (a) adolescents exposed to terror (N = 2908), and (b) citizens and army personnel following the second Lebanon War (N = 588). Across studies the results showed that high levels of resilience were associated with the lowest posttraumatic growth scores. The results imply that although growth and resilience are both salutogenic constructs they are inversely related. The theoretical and clinical implications of these findings are discussed.

Typically, trauma research examines pathogenic outcomes, particularly posttraumatic stress disorder (PTSD; Breslau et al., 1998). Posttraumatic stress disorder, however, is not experienced by most trauma survivors. For instance, in the National Comorbidity Survey trauma exposure rates exceeded 50%, yet lifetime PTSD was estimated at 7.8% (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). This finding has been replicated repeatedly (Ozer, Best, Lipsey, & Weiss, 2003). This consistent body of research suggests that most people exposed to trauma retain a stable equilibrium without reactive psychopathology (Bonanno, 2004; Bonanno, Galea, Bucciarelli, & Vlahov, 2006). Accordingly, the ability to sustain trauma without reporting PTSD is viewed by several researchers as resilience (Bonanno, 2004; Lepore & Revenson, 2006).

Like resilience, posttraumatic growth is a salutogenic construct. Growth refers to the development of a positive outlook following trauma (Tedeschi & Calhoun, 1996, 2004). Positive changes may include relating to others, new possibilities, personal strength, spiritual change, and appreciation for life (Tedeschi & Calhoun, 2004). Posttraumatic growth has been reported to follow various traumatic events, including war and terror (Helgeson, Reynolds, & Tomich, 2006). Theoretically, however, posttraumatic growth and resilience are often confused in the literature (Tedeschi, Calhoun, & Cann, 2007). For instance, it is debated as to whether or not...
Resilience and Growth

Posttraumatic growth is a form of resilience, and argued whether or not growth is superior to resilience (cf. Johnson et al., 2007; Lepore & Revenson, 2006; Tedeschi et al., 2007; Westphal & Bonanno, 2007). Therefore, the relationship between posttraumatic growth and resilience is unclear.

In sum, ambiguity characterizes the literature discussing the relationship between resilience and posttraumatic growth. Therefore, in this article we examine the association between resilience, defined as resistance to PTSD following adversity (Bonanno, 2004; Bonanno et al., 2006) and posttraumatic growth (Tedeschi & Calhoun, 2004). The relationship is examined among adolescents directly and indirectly exposed to terror, and citizens and combatants exposed to wartime trauma.

STUDY 1

Method

Participants and procedure. Data (N = 2908) were drawn from two samples of Israeli adolescents of whom 39% (n = 1133) were female. The first sample included adolescents in grades 7–9 (modal age 13) from 11 Israeli schools, with varied levels of terror exposure (see Laufer & Solomon, 2006). The second sample consisted of adolescents aged 16 diversely distributed in Israel (Hamama-Raz, Solomon, Cohen, & Laufer, 2008). Both samples used the same methods, but the first study was conducted during a period of greater terror (2002).

Measures. Posttraumatic stress symptom severity was assessed with the 20-item Child Post-Traumatic Stress Reaction Index (CPTS-RI; Frederick & Pynoos, 1988). Exposure to terror was examined with the 24-item Exposure Questionnaire (Lavi & Solomon, 2005; Solomon & Lavi, 2005). The back-translated Hebrew version (Laufer & Solomon, 2006) of the Posttraumatic Growth Inventory (PTGI; Tedeschi, & Calhoun, 1996) has adequate psychometric qualities and was used to measure posttraumatic growth.

Results and Discussion

The trend in Figure 1 illustrated that posttraumatic growth and resilience were inversely related. The ANOVAs showed a significant linear trend of less posttraumatic growth scores with more resilience (i.e., low PTSD scores), F(4, 2903) = 138.43, p < .001. This trend was reinforced by generally significant post hoc tests, adjusted for multiple testing. The exceptions to this trend of significance were between moderate and severe PTSD levels. This trend was replicated across the growth subscales and subanalyses of those with direct or indirect exposure. Effect sizes were high because they exceeded η² = 0.14.

Generally, the results support the hypothesis that resilience (a lack of PTSD) is associated with the least posttraumatic growth (Tedeschi & Calhoun, 2004). This pattern held for direct and indirect traumas and the posttraumatic growth subscales. It is, however, unclear whether this trend extends to other severe forms of exposure or adult samples. This is relevant because children and adults may differ in the abstract thinking abilities necessary for posttraumatic growth (Helgeson et al., 2006). Accordingly, a second study was conducted to examine the relationship between resilience and growth among adults (i.e., civilians and military personnel exposed to the second Lebanon war).

Figure 1. Posttraumatic growth by posttraumatic stress disorder (PTSD) levels in adolescents.
STUDY 2

Method

Participants and procedure. Data were gathered from Israeli civilians and military personnel approximately one year after the second Lebanon War in 2006 (N = 588). All civilians (n = 197, 63.5%) were residents of northern Israel, which was subjected to intense direct missile attacks during the war. Of the 277 military personnel 65.3% were active front-line combatants during the war. The sample’s average age was 26 years old (SD = 4), and 63.4% were male.

Measures. Posttraumatic stress disorder was measured using the DSM-based PTSD Inventory (Solomon & Dekel, 2007; Solomon, Neria, Ohry, Waysman, & Ginzburg, 1994). This measure permitted the derivation of three groups (see Solomon & Dekel, 2007), namely participants with PTSD (with minimally one intrusive symptom, three avoidant symptoms, and two hyperarousal symptoms), subclinical symptom severity, or no symptoms (i.e., resilience). Exposure was measured based on participants’ reports of their role (i.e., civilian or soldier) and location during the war (in the North or not). In combination the measures produced a grouping scheme of four exposure levels (combatant, noncombatant soldier, civilian in the North, civilian not in the North) by three PTSD symptom levels (resilience, presence of PTSD symptoms, and DSM PTSD). The Hebrew version of the PTGI was used to measure growth (Tedeschi & Calhoun, 1996).

Results and Discussion

Figure 2 indicated that the least posttraumatic growth was associated with the most resilience (i.e., no PTSD symptoms). The ANOVA indicated that significantly less posttraumatic growth was associated with more resilience, F(11, 575) = 12.68, p < 0.001. A majority of pairwise comparisons adjusted for multiple testing were statistically significant, particularly regarding resilience (note that significant differences corresponded to approximately a 0.8 mean difference in Figure 1 on aggregate). Aggregate and separate exposure group (soldiers and civilians) analyses were conducted for each growth scale that generally replicated this trend of statistical significance. Effect sizes were high because they

![Figure 2](image-url)
exceeded $\eta^2 = 0.14$. In sum, these results extended and replicated the Study 1 findings from adolescents to adults and showed that the highest resilience was associated with the least posttraumatic growth.

**DISCUSSION**

The present results based on two large samples of survivors of war and terror show an inverse relationship between growth and resilience. The findings support the contention that resilience conceptualized and measured by a lack of PTSD following adversity is inversely associated with posttraumatic growth (Tedeschi & Calhoun, 2004; Westphal & Bonanno, 2007). These findings appear to be intriguing, as resilience and posttraumatic growth are both salutogenic outcomes and so intuitively should be positively related. Scrutiny of the empirical literature, however, shows that these findings are consistent with research showing a link between vulnerability (PTSD) and posttraumatic growth (Tedeschi & Calhoun, 1996).

There may be at least two possible explanations of these findings. Resilience refers to a broad cluster of personal characteristics that facilitate the ability to manage despite trauma. These characteristics include hardness, optimism, self-enhancement, repressive coping, positive affect, and a sense of coherence (Agaibi & Wilson, 2005; Bonanno, 2004; Tedeschi & Calhoun, 2004). Collectively, these characteristics permit such people to emerge from trauma with less psychological wounds and relatively unchanged. Unlike resilience, growth represents a change for the better following adversity (Tedeschi & Calhoun, 1996). Accordingly, posttraumatic growth only occurs if trauma has been upsetting enough to drive the survivor to (positive) meaning-making of the negative event. Resilience may make a person less likely to perceive threat to self or world views. Thus, more resilient people are more able to mitigate the impact of the event. Accordingly, if growth is the need to find meaning to a traumatic event (Tedeschi & Calhoun, 1996, 2004), resilient people are less likely to engage in the meaning-making behaviors (Bonanno, Wortman, & Nesse, 2004) that are associated with growth because they are unlikely to struggle with the implications of the trauma. Therefore, it has been argued that resilient outcomes may provide little need or opportunity for posttraumatic growth (Westphal & Bonanno, 2007).

Another explanation debated in the literature (Sumalla, Ochoa, & Blanco, 2009) suggests that posttraumatic growth is a positive illusion of “wishful thinking” (Johnson et al., 2007; Maercker & Zoellner, 2004). It is a cognitive bias that reflects unrealistically optimistic beliefs (Taylor, 1983). The need for positive outcomes to adversity is observed among those who lack resilience (i.e., are more vulnerable). Among more vulnerable survivors trauma produces an imbalance in equilibrium that they strive to rectify by showing unrealistic optimism. Because resilient individuals retain their equilibrium they need not resort to unrealistic optimism. This is consistent with research showing that perceived benefits follow the trauma of victimization (McFarland & Alvaro, 2000), growth following man-made trauma (Hobfoll et al., 2009), cognitive adaptation theory (Taylor, 1983), and conceptualization of growth as a beneficial illusion.

The current studies do not, however, permit the adoption of one particular explanation. Also, resilience is measured as a lack of PTSD, is diversely defined, and may reflect a constellation of personal characteristics. Accordingly, the absence of PTSD need not mean resilience (Almedom & Glandon, 2007). Thus, longitudinal multimethod research is appropriate to examine the different explanations and the temporal order of PTSD, resilience, and growth (Hobfoll et al., 2007), and to distinguish different conceptualizations and measures of resilience (i.e., resistance, resilience, and reconfiguration; Bonanno, 2004).

In conclusion, our findings based on two large samples exposed to man-made traumas extend the literature that examines the association between growth and resilience. Generally, high resilience (conceptualized as resistance) leaves little scope for posttraumatic growth. Clinically, this suggests that showing little distress and little growth following adversity may be a healthy sign of resilience, rather than signifying pathological coping. Theoretically, this study highlights that two seemingly similar salutogenic constructs are empirically inversely related.

**REFERENCES**


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