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Short communication

Can guilt lead to psychological growth following trauma exposure?

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ABSTRACT

With the growing interest in posttraumatic growth (PTG) and its predictors, this study examined the relationship between trauma-related guilt and PTG in a sample of veterans over time. Self-reported guilt, PTG, and posttraumatic stress disorder (PTSD) symptoms were measured in combat veterans and prisoners of war (POWs). Positive correlations were found between guilt, PTSD, and PTG levels. Hierarchical regression revealed that initial guilt levels predicted subsequent PTG controlling for initial PTSD in combat veterans but not in POWs. The findings suggest that posttraumatic growth can be facilitated by trauma-related guilt, underscoring the complex relationship between positive and negative trauma outcomes.

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1. Introduction

While the negative sequelae of trauma have been studied repeatedly (Breslau et al., 2003) there is increasing interest in investigating the common wisdom that suffering can lead to growth. Posttraumatic growth (PTG), pertaining to positive psychological changes in self-view, relationships, and life philosophy, signifies that individuals surpassed their pre-trauma level of functioning (Tedeschi and Calhoun, 2004). Although PTG cannot occur in the absence of a trauma, the interplay between the positive and negative aspects of the trauma response is still poorly understood.

It has been suggested that emotional distress related to cognitive-schema disruption sets PTG in motion (Tedeschi and Calhoun, 2004). Intrusive trauma-related thoughts in posttraumatic stress may facilitate contemplation and eventually initiate deliberate cognitive processing in an attempt to make meaning of the traumatic event (Tedeschi and Calhoun, 2004). While PTSD has been positively linked with PTG (see Cho and Park, 2013, for a review), although not exclusively, and has been shown to trigger subsequent growth (Dekel et al., 2012), other distress related responses have been relatively ignored (Dekel et al., 2011).

Trauma-related guilt is a highly prevalent response (e.g., Resick

and Schnicke, 1993; Miller et al., 2013). Guilt has been repeatedly associated with post-trauma psychopathology (e.g., Resick et al., 2002; Owens et al., 2008), and even suicidal ideation (Bryan et al., 2013), yet at the same time it has been linked with adaptive behavior (Tangney et al., 2007a, 2007b). Generally speaking, guilt is conceptualized as a multi-dimensional construct entailing negative affect and related cognitions (Kubany and Manke, 1995). Negative feelings are accompanied by beliefs about how one should have acted, thought, or felt differently in the traumatic event. Although guilt may facilitate growth because it is implicated in ongoing self-evaluation and ruminative cognitive processing of traumatic events (Birrer and Michael, 2011) and is also embedded in PTSD, no study has examined the relationship between guilt and PTG.

The present study is a longitudinal investigation of the association between guilt and PTG in a sample of Israeli combat veterans. We put forward the hypothesis that trauma-related guilt plays a role in the development of psychological growth.

2. Method

2.1. Participants

This study is part of a larger research project on veterans of the 1973 Yom Kippur War, with three measurements: 18 (T1), 30 (T2) and 35 (T3) years after the war (Dekel et al., 2012). The sample in

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follow-ups did not differ from the initial sample with regard to PTSD, military rank, age and education. Following Israel Defense Forces (IDF) and Tel Aviv University Review Board's approval, we contacted veterans, among them former prisoners of war (POWs), enlisted in the IDF records. A letter describing the study was sent to potential participants followed by a phone call to set a time for the assessments. Upon obtaining informed consent, interviews were conducted by mental health professionals and graduate students at a central hospital or at participant's homes.

The present study uses main study variables derived from the two follow-up assessments and includes participants with data obtained at both assessments. In the original study 287 veterans participated in T2, among them 221 (obtaining study measures at both T2 and T3) took part in this study, constituting a 77% response rate. 54% ($n=119$) were identified as POWs, i.e., they participated in the war and were taken captive, whereas 46% ($n=102$) were identified as combatants, i.e., they participated in the same war, but were not taken captive. Groups were matched on military background and socio-demographic status. All participants were males, mean age at T2 was 53.4 ($SD=4.4$); mean years of schooling was 14.02 ($SD=3.41$); the majority were secular (67%); and with an average income (62%).

2.2. Measures

Guilt was measured at T2 using the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996), a 32-item questionnaire, listing items of a 5-point scale, comprising of 3 subscales: global guilt, distress, and guilt cognitions. Subscale scores as well as total guilt score were calculated. The TRGI has good internal consistency and stability (Kubany et al., 1996) (α for total score was 0.87 and was between 0.81 and 0.91 for the subscales).

PTSD symptoms in the preceding month were assessed at T2 and T3 using the PTSD Inventory (Dekel et al., 2012) listing 17 items anchored on the Yom Kippur War reflecting DSM-IV symptoms of PTSD rated for frequency on a 4-point scale (1–4). The inventory has good psychometric properties including high convergent and concurrent validity (Solomon et al., 1993). We calculated number of responses rated at least "often" (α for total score was 0.94).

Posttraumatic growth was measured at T2 and T3 by the commonly used Posttraumatic Growth Inventory (PTGI; Tedeschi and Calhoun, 1996), listing items on a 4-point scale, comprising of five subscales: relating to others, new possibilities, personal strength, spiritual change and appreciation of life. Participants report the extent of change that occurred in their life following the trauma. We calculated a total growth score (α for total score was 0.94).

2.3. Data analysis

The magnitude of associations between guilt, PTSD, and PTG were examined using a series of Pearson correlations. The contribution of guilt (T2) to the prediction of PTG (T3) was examined using hierarchical regression analyses. Analyses were conducted per study group (POWs versus combatants) to assess the contribution of type of trauma to the relationship of guilt to PTG. PTSD at T2 was entered in step 1 and guilt was entered at step 2, to examine its contribution to PTG controlling for PTSD levels. Similar analyses were run on guilt subscales.

3. Results

Positive relations were found between guilt and PTSD (T1: $r=0.70$, $p < 0.01$; T2: $r=0.59$, $p < 0.01$) and between guilt and PTG

Table 1

Standardized regression coefficients for predicting PTG at T3 by PTSD and guilt for combatants and POWs.

Variable	Combatants					POWs				
	B	SEB	β	R^2	ΔR^2	B	SEB	β	R^2	ΔR^2
PTSD, T2	0.05	0.02	0.27*	0.07*	–	0.02	0.01	0.19*	0.04*	–
Guilt, T2	0.21	0.09	0.32*	0.16**	0.09†	0.02	0.04	0.07	0.04	–

Note. POWs= prisoners of war; PTSD= Posttraumatic stress symptoms; predictors assessed at T2 and PTG at T3.

* $p < 0.05$.

** $p < 0.01$.

(T1: $r=0.36$, $p < 0.01$; T2: $r=0.36$, $p < 0.01$) cross-sectional and between times. The more guilt veterans reported, the higher were their PTSD symptoms and PTG levels. As reported in our previous analysis of this sample, POWs endorsed higher levels of guilt, PTSD, and PTG than combatants (Solomon et al., 2015).

Does guilt predict PTG?

Table 1 presents the results of regression analyses for the prediction of PTG by guilt and type of trauma. For combatants, as expected, PTSD symptoms at T2 significantly predicted PTG at T3 ($B=0.05$, $\beta=0.27$, $p=0.04$, $R^2=0.07$). Importantly, guilt at T2 significantly predicted PTG at T3 ($B=0.21$, $\beta=0.32$, $p=0.02$, $R^2=0.16$, $\Delta R^2=0.09$), and added 9% to the variance, indicating its moderate contribution above and beyond initial PTSD levels. Specifically, guilt-induced distress added to the prediction of PTG ($B=0.32$, $\beta=0.32$, $p=0.02$, $R^2=0.17$, $\Delta R^2=0.10$), whereas global guilt ($B=-0.09$, $\beta=-0.03$, $p=0.80$) and guilt cognition ($B=0.20$, $\beta=0.15$, $p=0.28$) did not. For POWs, PTSD symptoms predicted subsequent PTG ($B=0.02$, $\beta=0.19$, $p=0.05$, $R^2=0.04$), however, guilt did not make an additional significant contribution ($B=0.02$, $\beta=0.07$, $p=0.58$, $R^2=0.04$) nor the subscales (global guilt: $B=0.05$, $\beta=0.09$, $p=0.47$; distress: $B=0.00$, $\beta=0.01$, $p=0.89$, and guilt cognition: $B=-0.04$, $\beta=-0.04$, $p=0.75$).

4. Discussion

The role of trauma-related guilt in promoting psychological growth has received no empirical scrutiny. Here we show that guilt can facilitate psychological growth following combat exposure. Guilt-induced distress predicted subsequent PTG five years later, controlling for PTSD symptoms level, in a sample of combat veterans but not in POWs.

Guilt is regarded as a psychologically adaptive conscious emotion and a type of moral barometer (Tangney and Tracy, 2012). Guilt promotes other-oriented empathy, constructive coping strategies, and fosters reparative action (Tangney et al., 2007a, 2007b). These strategies and actions may foster PTG in relationship and life philosophy domain, such as having more compassion towards others and a greater appreciation of life. In their study on combat veterans, Hijazi et al. (2015) report a positive association between the PTG appreciation of life and the guilt cognition wrongdoing.

Guilt may also promote PTG through the ruminative processing of the trauma and the ongoing self-evaluation, which may generate the need to make sense of the event and find a positive outcome. In a related vein, we cannot negate the possibility that guilt associated with PTG is attributed to processes of cognitive dissonance. Guilt involves discrepancy between actual self and ought self and negative evaluation from the own perspective (Higgins, 1987). PTG may be seen as a coping mechanism to handle unbearable guilt-induced distress, be it a perceived illusion or veridical change.

Our findings suggest that time and guilt severity may account for the positive relationship between guilt and PTSD. Possibly,

individuals experiencing relatively moderate levels of guilt can channel it towards reparative behaviors and finding positive meaning as the impact of the trauma subsides. In contrast, POWs are prone to experience elevated levels of guilt given the massive and interpersonal nature of captivity, which are tightly linked with PTSD (Solomon et al., 2015).

There are several caveats that should be noted. Although we measured PTSD symptoms, whether a subject had clinically diagnosed PTSD was not asked. Also, by using a self-report measure—though the PTGI is widely used—we may have assessed perceptions of growth instead of growth itself. The inevitable attrition rate between assessments should be taken into account as well as the large time lapse between the trauma and the first assessment. Ideally, we would obtain a measure of guilt in the very immediate phase following trauma exposure and assess the relationship of guilt to PTG and mediating variables over time.

In summary, this study demonstrates the reported can guilt triggers psychological growth in a sample of combatants in the very long-term phase following the war. Guilt has recently been recognized in DSM-V PTSD symptom criteria and resolution of trauma-related guilt is targeted in existing psychological treatments (Nishith et al., 2005). Conceptualizing guilt as a potential forerunner of posttraumatic growth should also be addressed in treatment. Our findings point towards the adaptive role of guilt in adjustment and warrant more research to untangle the relationships between trauma-related guilt, posttraumatic distress, and growth.

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References

Birrer, E., Michael, T., 2011. Rumination in PTSD as well as in traumatized and non-traumatized depressed patients: a cross-sectional clinical study. *Behav. Cogn. Psychother.* 39, 381–397.

- Breslau, N., Davis, G.C., Schultz, L.R., 2003. Posttraumatic stress disorder and the incidence of nicotine, alcohol, and other drug disorders in persons who have experienced trauma. *Arch. Gen. Psychiatry.* 60, 289–294.
- Bryan, C.J., et al., 2013. Guilt is more strongly associated with suicidal ideation among military personnel with direct combat exposure. *J. Affect. Disord.* 148, 37–41.
- Cho, D., Park, C.L., 2013. Growth following trauma: overview and current status. *Ter Psicol.* 31, 69–79.
- Dekel, S., Mandl, C., Solomon, Z., 2011. Shared and unique predictors of post-traumatic growth and distress. *J. Clin. Psychol.* 67, 241–252.
- Dekel, S., Ein-Dor, T., Solomon, Z., 2012. Posttraumatic growth and posttraumatic distress: longitudinal study. *Psychol. Trauma* 4, 94–101.
- Hijazi, A.M., Keith, J.A., O'Brien, C., 2015. Predictors of posttraumatic growth in a multiwar sample of U.S. Combat veterans. *Peace Confl.* 21, 395–408.
- Higgins, E.T., 1987. Self-discrepancy: a theory relating self and affect. *Psychol. Rev.* 94, 319–340.
- Kubany, E.S., Manke, F.M., 1995. Cognitive therapy for trauma-related guilt: conceptual bases and treatment outlines. *Cogn. Behav. Pract.* 2, 27–61.
- Kubany, E.S., et al., 1996. Development and validation of the trauma related guilt inventory (TRGI). *Psychol. Assess.* 8, 428–444.
- Miller, M.W., et al., 2013. The prevalence and latent structure of proposed DSM-5 posttraumatic stress disorder symptoms in US national and veteran samples. *Psychol. Trauma* 5, 501–512.
- Nishith, P., Nixon, R.D.V., Resick, P.A., 2005. Resolution of trauma-related guilt following treatment of PTSD in female rape victims: a result of cognitive processing therapy targeting comorbid depression? *J. Affect. Disord.* 86, 259–265.
- Owens, G.P., Chard, K.M., Cox, T.A., 2008. The relationship between maladaptive cognitions, anger expression, and posttraumatic stress disorder among veterans in residential treatment. *J. Aggress. Maltreat. Trauma* 17, 439–452.
- Resick, P.A., Schnicke, M.K., 1993. Cognitive processing therapy for sexual assault victims. *J. Consult. Clin. Psychol.* 60, 748–756.
- Resick, P.A., et al., 2002. A comparison of cognitive processing therapy with prolonged exposure and a waiting condition for the treatment of chronic post-traumatic stress disorder in female rape victims. *J. Consult. Clin. Psychol.* 70, 867–879.
- Solomon, Z., et al., 1993. Assessment of PTSD: validation of the revised PTSD inventory. *Isr. J. Psychiatry Relat. Sci.* 30, 110–115.
- Solomon, Z., Avidor, S., Mantin, H., 2015. Guilt among ex-prisoners of war. *J. Aggress. Maltreat. Trauma* 24, 721–739.
- Tedeschi, R.G., Calhoun, L.G., 2004. Posttraumatic growth: conceptual foundations and empirical evidence. *Psychol. Inq.* 15, 1–18.
- Tedeschi, R., Calhoun, L., 1996. The posttraumatic growth inventory: measuring the positive legacy of trauma. *J. Trauma. Stress* 9, 455–471.
- Tangney, J.P., Stuewig, J., Mashek, D.J., 2007a. What's moral about the self-conscious emotions?. In: Tracy, J.L., Robins, R.W., Tangney, J.P. (Eds.), *The Self-Conscious Emotions: Theory and Research*. Guilford Press, New York, pp. 21–37.
- Tangney, J.P., Stuewig, J., Mashek, D.J., 2007b. Moral emotions and moral behavior. *Annu. Rev. Psychol.* 58, 345–372.
- Tangney, J.P., Tracy, J.L., 2012. Self-conscious emotions. In: Leary, M.R., Tangney, J.P. (Eds.), *Handbook of Self and Identity*. Guilford Press, New York, pp. 446–478.