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Secondary Traumatization and Differentiation Among the Wives of Former POWs: A Reciprocal Association

Yael Lahav,[1,2] Yafit Levin,[2] Moshe Bensimon,[3] Yaniv Kanat-Maymon,[4] and Zahava Solomon[2]
[1]University of Southern Denmark, Department of Psychology, Odense, Denmark
[2]I-Core Research Center for Mass Trauma, Bob Shapell School of Social Work, Tel-Aviv University, Tel-Aviv, Israel
[3]Department of Criminology, Bar-Ilan University, Ramat-Gan, Israel
[4]Interdisciplinary Center Herzliya, Herzliya, Israel

Repercussions of war captivity may transmit to spouses of former prisoners of war (POW) via posttraumatic stress symptoms (PTSS). Overidentification with their partners underlies the PTSS experienced by former wives of POWs, thus implying impaired self-differentiation. Although wives' indirect exposure to their husbands' captivity and subsequent PTSS has been associated with the wives' PTSS and differentiation, the combined effects remain unclear. Furthermore, previous cross-sectional studies could not illuminate directionality. This prospective study investigates (a) the moderating role of indirect exposure to captivity in the association between husbands' PTSS and wives' PTSS and differentiation; and (b) the directionality of the association between wives' differentiation and PTSS over time. The wives of both former POWs ($n = 143$) and combatants ($n = 102$) were assessed 30 (T1) and 38 (T2) years after the 1973 Yom Kippur War. The wives of former POWs endorsed higher PTSS and fusion differentiation, $\eta^2_p = .06$ to .14. Indirect exposure to captivity moderated the associations between husbands' PTSS and wives' PTSS, Cohen's $f^2 = .01$ to .03. The association between the wives' differentiation and PTSS over time was bidirectional, $\beta = -0.18$ to 0.68; $R^2 = .54$ to .73. Results suggest a vicious cycle between PTSS and differentiation, and the need for clinical interventions that further differentiation for spouses of prolonged trauma victims.

War captivity is an extreme traumatic experience (e.g., Rintamaki, Weaver, Elbaum, Klama, & Miskevics, 2009). Whereas war combatants are generally exposed to threats to their physical and mental integrity (e.g., Nazarian, Kimerling, & Frayne, 2012), prisoners of war (POWs) are exposed to additional traumatic stressors, such as physical and psychological torture, systematic humiliation, deprivation of basic needs, and isolation (Engdahl, Harkness, Eberly, Page, & Bielinski, 1993). The trauma of captivity then leaves former POWs highly susceptible to somatic distress (e.g., Lahav, Rodin, & Solomon, 2015) and psychiatric symptoms (Rintamaki et al., 2009), most notably posttraumatic stress symptoms (PTSS; Dikel, Engdahl, & Eberly, 2005). According to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association [APA], 2000), on which the current study relies, PTSS include intrusion (e.g., flashbacks), avoidance (e.g., numbness), and hyperarousal (e.g., alertness) symptoms. Furthermore, in light of the relationship between captors and captives, war captivity bears detrimental ramifications for interpersonal relationships (Herman, 1992), evident in various familial domains (e.g., Cook, Riggs, Thompson, Coyne, & Sheikh, 2004).

The implications of war captivity are not limited to primary trauma survivors (i.e., former POWs), and may be transmitted to significant others (e.g., Figley, 1986). Secondary traumatization (ST) describes how individuals in close contact with a trauma survivor may experience considerable emotional distress and, over time, become indirectly traumatized (e.g., Figley, 1986). Often, ST manifests in symptoms similar to those displayed by the primary trauma survivors, including PTSS (Galovski & Lyons, 2004).

The spouses of traumatized former POWs are particularly susceptible to secondary PTSS (e.g., Galovski & Lyons, 2004). This heightened vulnerability is typically understood as a reaction to their husbands' exposure to captivity or as a reaction to their husbands' PTSS (e.g., Dekel & Solomon, 2006; Galovski & Lyons, 2004). The contagion theory (Figley, 1986) suggests that the processes underscoring the development of ST among spouses of trauma survivors include the spouses' identification with their partners, leading to an internalization of the traumatic experiences. This suggests a pivotal role of self-differentiation with regard to the development of ST.

Self-differentiation is defined as "the ability to distinguish between thoughts and feelings in an emotional relationship system" (Bohlander, 1995, p. 165). On the intrapsychic level, high

Correspondence concerning this article should be addressed to Yael Lahav, I-Core Research Center for Mass Trauma, Tel Aviv University, Chaim Levanon 30, Tel-Aviv, 6997801, Israel. E-mail: lahav.yael62@gmail.com

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differentiation involves the ability to distinguish intellect from emotion and to engage in calm logical reasoning or affective experiencing, depending on situational demands. On the interpersonal level, the focus of the present study, self-differentiation concerns the ability to experience both relationship intimacy and autonomy as enhancing and complementary experiences (e.g., Bowen, 1978). High self-differentiation ("balance") reflects the individual's autonomous sense of self while maintaining close connections with significant others. Alternatively, low self-differentiation may manifest as pleasing others at the expense of one's self ("fusion") or as retreating emotionally from others ("cut-off"; Kerr & Bowen, 1988).

Typically, differentiation is considered a stable personal attribute (Kerr & Bowen, 1988). Nevertheless, literature indicates that direct as well as vicarious exposure to war captivity trauma (e.g., Dekel, 2010) could undermine one's self-differentiation capacities. The concerns of the former POWs' spouses regarding their husbands' well-being during and after captivity may result in overinvolvement and fusion in the relationship, or in emotional retreat and cut-off in the face of their partners' plight.

Furthermore, the partner's posttraumatic reaction resulting from captivity might impinge the spouse's capacity for self-differentiation. For example, a husband's emotional flooding and functional difficulties resulting from PTSS (APA, 2000) might amplify his dependency on his wife and hinder his wife's ability to maintain the necessary emotional divide. At the same time, a husband's emotional numbness and dissociation could increase his wife's avoidance tendencies, leading to cut-off patterns in the relationship. Research has supported this claim, revealing an association between the high magnitude of the husbands' PTSS and wives' low differentiation among couples where the husband is a former POW (e.g., Dekel, 2010).

Although evidence indicates that husbands' war captivity and PTSS are linked to wives' PTSS and poor differentiation (Dekel, 2010; Galovski & Lyons, 2004; Greene, Lahav, Bronstein, & Solomon, 2014), the combined effects remain unclear. One may wonder whether the unique characteristics of war captivity, when compared with combat, may lead not only to deeper and enduring psychological effects among the spouses of former POWs, but also moderate the repercussions of the husbands' symptomatology on their wives' PTSS and differentiation capacities. Hence, the impact of husbands' PTSS on wives' PTSS and differentiation would presumably be intensified among former POWs' wives when compared with wives of combatants who have not endured captivity.

Investigating the possible combined impact of vicarious exposure to war captivity and husbands' PTSS on wives' PTSS and differentiation has theoretical significance and clinical importance. Such an examination can potentially assist in more accurately identifying risk factors for ST among spouses of former POWs. However, to the best of our knowledge, this subject has not yet been explored. The present study aims to fill this gap by investigating the moderating role of indirect exposure to captivity within the associations between the PTSS experienced by former POWs, and their wives' PTSS and differentiation.

Differentiation is seen as a personal resource, affecting individuals coping with stress (Kerr & Bowen, 1988; Skowron, Wester, & Azen, 2004). Research has indicated an association between differentiation and ST, with poor differentiation associated with elevated PTSS among indirect trauma survivors, such as second-generation Holocaust survivors (e.g., Giladi & Bell, 2013), combatants' wives (e.g., Ben Arzi, Solomon, & Dekel, 2000), and the wives of former POWs (Dekel, 2010). However, the cross-sectional nature of these studies leaves them incapable of illuminating directionality.

Theory (e.g., Bowen, 1978), suggests that the relationship between differentiation and spousal ST (i.e., PTSS) could be reciprocal. Low differentiation may act as a risk factor for PTSS. Whereas highly differentiated individuals are more capable of modulating emotional arousal, maintaining clear emotional boundaries with others, and using family support, poorly differentiated individuals are assumed to be more emotionally reactive and may suffer from emotional flooding in stressful situations (Bowen, 1978; Kerr & Bowen, 1988). Hence, the hypothesis arises that lower differentiation in spouses of former POWs and war combatants would predict higher levels of PTSS.

Conversely, suffering from ST may potentially hinder the spouses' ability to self-differentiate. Wives with elevated PTSS, as a result of indirect exposure, might feel helpless and become dependent on their husbands, enacting fusion in their relationship. Alternatively, these wives may avoid close interactions and suffer from emotional numbness (APA, 2000), intensifying cut-off tendencies.

The current study is the first to examine the directionality of the aforementioned association between differentiation and PTSS. Assessing the associations between the two variables longitudinally among the wives of former POWs and the wives of matched control combat veterans (CV), we hypothesized that (a) the wives of former POWs would report more PTSS and poorer differentiation when compared with the wives of CVs; (b) indirect exposure to war captivity would moderate the associations between the husbands' PTSS and the wives' PTSS and differentiation; and (c) wives' PTSS and differentiation would have a bidirectional association over time.

Method

Participants and Procedure

This study constitutes part of a larger longitudinal study assessing the impact of war captivity on former POWs and their wives (for more details, see Greene et al., 2014; Lahav, Solomon, & Levin, 2016). The present study utilized data from two groups of wives of 1973 Yom Kippur War combat veterans: the wives of former POWs and the wives of CVs. Combatants were matched with former POWs in both personal (age, ethnic background, marital status, and educational) and military (military units, roles, and Israeli Defense Forces [IDF] psychosocial profiles) backgrounds. Assessments were conducted at two time points: 2003 (T1) and 2011 (T2).

Using IDF files, we located the husbands (former POWs and CVs) and requested their approval to contact their wives. We sent potential participants a letter introducing the study and informing them that research assistants (licensed social workers) would contact them in the following days. After receiving an explanation of the study, wives who agreed to participate were offered the option of filling out research questionnaires in their homes or at a location of their choice. Informed consent was obtained for all participants. This study was approved by the Tel Aviv University Ethics Committee (Tel-Aviv, Israel).

According to the IDF, 240 combatants from the Israeli infantry were captured during the Yom Kippur War and held in Egypt or Syria for between 1 to 8 months. In T1, 111 former POWs who participated were married; 90 wives participated in T1 (81.1% response rate). In T2, the number of married former POWs increased to 147. Hence, the number of wives of former POWs who participated also increased, to 114 (77.5% response rate). Of the 90 wives of former POWs who participated in T1, 61 participated in T2 (67.8%). In T2, 53 wives who did not participate in T1 participated.

In T1, 102 CVs who participated were married, and 75 of their wives participated in T1 (73.5% response rate). In T2, 103 CVs who participated were married, and 57 wives participated in T2 (55.3% response rate). Of the 75 CVs' wives who participated in T1, 30 participated in T2 (40.0%). In T2, 27 participants took part who did not participate in T1.

No significant differences were found between the wives of POWs and the wives of CVs in country of birth, $\chi^2(2, n = 89) = 3.37$, $p = .143$; age, $t(170) = -0.20$, $p = .844$; number of children, $t(170) = 0.57$, $p = .570$; years of marriage/cohabitation, $t(164) = 0.84$, $p = .404$; timing of marriage (before/after the war), $\chi^2(1, n = 171) = 0.05$, $p = .817$; employment status, $\chi^2(2, n = 172) = 4.28$, $p = .118$; and number of prior traumatic events, $t(124.81) = -0.49$, $p = .625$.

At T2, wives' ages ranged from 43 to 79 years ($M = 58.28$, $SD = 5.79$). For 89.4% of the wives the current marriage was their first and for 10.6% the current marriage was their second. For place of birth, 69.8% of the wives were born in Israel, 16.3% in Asia or Africa, and 13.9% in America or Europe. Wives' years of education ranged from 8 to 25 ($M = 14.61$, $SD = 3.18$). There were 47.7% of the wives who were employed fulltime, 20.9% were employed parttime, and 31.4% were not working. There were 60.7% of the wives who served in the Israeli Army.

Measures

Wives' PTSS (total score and symptoms clusters) and differentiation were measured at T1 and T2. Husbands' PTSS total score was measured at T1.

Wives' PTSS total score and PTSS clusters scores and husbands' PTSS total score were assessed via the PTSD Inventory (PTSD-I; Solomon et al., 1993), a well-validated, 17-item self-report questionnaire. The PTSD-I corresponds to the *DSM-IV-TR* diagnosis for PTSD. In addition to the PTSS total score, based on all 17 items, three symptom clusters were computed for the wives: (a) persistent reexperiencing of the traumatic event (i.e., intrusion; five items), (b) persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (i.e., avoidance; seven items), and (c) persistent symptoms of increased arousal (i.e., hyperarousal; five items).

Respondents rated symptoms experienced in the previous month on a scale from 0 (*not at all*) to 4 (*almost always*). Wives rated their symptoms relating to their husbands' experiences of combat or captivity. Husbands rated their symptoms relating to their experiences of combat or captivity. The number of positively endorsed symptoms was calculated by the items answered as 3 (*often*) or 4 (*almost always*) as these responses best capture the *DSM-IV-TR* criteria of the persistent experience of symptoms.

The PTSD-I has proven psychometric properties and convergent validity (e.g., Solomon et al., 1993). In the present study, Cronbach's alpha for wives' PTSS were .91 and .91 for total score PTSS at T1 and T2, respectively; .88 and .86 for intrusion at T1 and T2, respectively; .77 and .75 for avoidance at T1 and T2, respectively; and .84 and .85 for hyperarousal at T1 and T2, respectively. Cronbach's alpha for the husbands' total PTSS score at T1 was .95.

Wives' self-differentiation was measured via the Self-Differentiation Scale (SDS; Appel, 1996), a 27-item self-report questionnaire. This scale measured three dimensions of self-differentiation concerning one's marital relationship, with nine statements for each dimension: (a) fusion: the tendency to be overinvolved within the relationship (e.g., "I do not agree to go out without my spouse"); (b) balance: the capacity to participate in the relationship without losing one's individuality (e.g., "When we disagree, I try to understand my spouse's standpoint"); and (c) cut-off: the tendency to prioritize individuality and personal autonomy (e.g., "When I have a conflict with my spouse, I withdraw"). Participants rated how accurately each statement described how they relate to their husbands, using a 5-point scale ranging from "*not at all*" to "*very much.*" In the present study, Cronbach's alpha for wives' differentiation were .62 and .67 for fusion at T1 and T2, respectively; .76 and .78 for balance at T1 and T2, respectively; and .73 and .78 for cut-off, at T1 and T2, respectively.

Data Analysis

Substantial attrition, and in several cases, addition are common in longitudinal designs (Collins, Schafer, & Kam, 2001). In the current study, both occurred from T1 to T2. To handle the missing data, wives were included if they participated in at least one of the measurements ($n = 165$ at T1 and $n = 171$ at T2). Overall, 25.3 to 37.1% of data were missing across waves. To decide whether the data had missing values in a random pattern, we conducted analyses of differences between these groups in all of the variables, using Little's missing completely at random test (MCAR; Collins et al., 2001).

Table 1
Means, Standard Deviations, and Univariate F Results of PTSS Among the Wives of Former Prisoners of War (POW) and Wives of Combat Veterans (CV)

		Wives of POWs ($n = 143$)		Wives of CVs ($n = 102$)			Group		Time		Group x Time	
Variable	Range	*M*	*SD*	*M*	*SD*	Cohen's *d*	$F(1, 243)$	η^2_p	$F(1, 243)$	η^2_p	$F(1, 243)$	η^2_p
PTSS total score												
T1	0–16	4.88	3.95	2.08	2.41	0.92						
T2	0–17	4.90	4.08	2.97	2.68	0.54	30.26^{***}	.11	11.47^{**}	.05	10.45^{**}	.04
Intrusion												
T1	0–5	1.33	1.51	.32	0.66	0.82						
T2	0–5	1.44	1.53	.52	0.73	0.73	40.60^{***}	.14	7.84^{**}	.03	.80	.00
Avoidance												
T1	0–6	1.45	1.50	.67	1.04	0.59						
T2	0–7	1.44	1.57	1.00	1.07	0.32	14.08^{***}	.06	4.97^{*}	.02	5.87^{*}	.02
Hyperarousal												
T1	0–5	2.11	1.52	1.09	1.30	0.71						
T2	0–5	2.03	1.67	1.45	1.41	0.37	18.31^{***}	.07	5.69^{*}	.02	13.13^{***}	.05

Note. PTSS = posttraumatic stress symptoms; T1 = 30 years after the 1973 Yom Kippur War (2003); T2 = 38 years after the 1973 Yom Kippur War (2011).
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Although the analysis revealed that data were missing completely at random, $\chi^2(160) = 86.74$, $p > .05$, an advanced method of maximum likelihood (ML) imputation was conducted using SPSS 21. The ML method is considered optimal for attrition and addition of participants over time (Collins et al., 2001). ML imputation is effective when conducted in a longitudinal model that borrows information from across waves to serve as auxiliary variables (Schafer & Graham, 2002). This study utilized variables measured for wives across waves to increase the likelihood for optimal estimations of missing values. The final sample included 245 participants: 143 wives of former POWs wives and 102 wives of CVs.

To compare the groups in self-differentiation and PTSS, a series of mixed analyses of variance with study group as the between group variable was conducted. Time was the within group variable. To examine the moderating role of indirect exposure to captivity (i.e., wives of former POWs vs. wives of CVs) in the association between the husbands' PTSS and wives' PTSS and differentiation, we performed a series of multiple hierarchical regressions predicting wives' PTSS and differentiation. The analyses included three steps. The first step consisted of the study group. The second step consisted of the husbands' PTSS at T1. The third step consisted of the interaction between study group and husbands' PTSS at T1. All predictors were mean-centered prior to entering them into the regression analyses. Significant interactions were probed using the PROCESS computational macro (Hayes, 2012).

To examine the associations between wives' differentiation and PTSS across time, we conducted an autoregressive cross-lagged modeling strategy (ARCL; Anderson, 1960). To estimate the model we used AMOS statistics, Version 22. The comparative fit index (CFI) and Tucker Lewis index (TLI) should be greater than .90 to indicate excellent fit. The root mean square error of approximation (RMSEA) less than .05 represents good fit; values of .05 to .08 represent moderate fit; and values of .08 to .10 represent adequate fit (Browne & Cudeck, 1993). A standardized root mean residual (SRMR) lower than .07 indicates good fit (Browne & Cudeck, 1993). Chi-square values were used for purposes of model comparison and divided by the degrees of freedom to avoid bias due to sample size.

Results

PTSS and Differentiation in the Wives of Former POWs and the Wives of CVs

Mixed analyses of variance compared the groups in self-differentiation and PTSS over time (Tables 1 and 2). Analyses for PTSS total score, avoidance, and hyperarousal revealed significant effects for group, time, and the time × group interaction. The wives of former POWs wives had an elevated PTSS total score, avoidance, and hyperarousal, compared to CVs' wives. The wives of CVs had a significant increase in PTSS total score, avoidance, and hyperarousal from T1 to T2. However, among the wives of former POWs the effects of time on PTSS total score, avoidance, and hyperarousal, were nonsignificant.

Analysis for intrusion revealed significant effects for group and for time only. Wives of former POWs had higher levels of intrusion compared to the wives of CVs. The levels of intrusion increased from T1 to T2 among both groups. Analysis for fusion self-differentiation revealed significant effect for group

Table 2
Means, Standard Deviations, and Univariate F Results of Differentiation Among the Wives of Former Prisoners of War (POW) and Wives of Combat Veterans (CV)

		Wives of former POWs Wives ($n = 143$)		Wives of CVs ($n = 102$)			Group		Time		Group x Time	
Variable	Range	*M*	*SD*	*M*	*SD*	Cohen's *d*	$F(1, 243)$	η^2_p	$F(1, 243)$	η^2_p	$F(1, 243)$	η^2_p
Fusion												
T1	1–4	2.45	0.56	2.20	.50	0.47						
T2	1–5	2.46	0.58	2.46	.58	0.00	20.94^{***}	.08	1.75	.01	3.59	.02
Balance												
T1	1–5	3.89	0.53	3.98	.51	0.17						
T2	1–5	3.82	0.58	3.91	.41	0.17	2.06	.01	5.66^{*}	.02	.01	.00
Cut-off												
T1	1–4	1.99	0.51	1.93	.53	0.11						
T2	1–5	2.09	0.59	1.95	.54	0.24	2.38	.01	4.43^{*}	.02	2.62	.01

Note. PTSS = posttraumatic stress symptoms; T1 = 30 years after the 1973 Yom Kippur War (2003); T2 = 38 years after the 1973 Yom Kippur War (2011).
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

only. The wives of former POWs had elevated levels of fusion compared to CVs' wives. Analyses for balance and cut-off self-differentiation revealed significant effects for time only. Among both groups, the levels of balance decreased and levels of cut-off increased from T1 to T2.

Due to there being only a few independent variables, the η^2_p is not reliable. Hence, we calculated the Cohen's effect size (calculated according to Hedges & Olkin, 1985, p. 86) for all the means and standard deviations based on group sizes (see Tables 1 and 2). According to Cohen (1988), small effect sizes range between 0 and 0.2, medium effect sizes range from 0.2 to 0.5, and large effect sizes are 0.5 and above. We found that for most comparisons of the PTSD subscales, on both T1 and T2, Cohen's *d* was large and two of the effects (for T2 hyperarousal and avoidance) had intermediate effect sizes. For the differentiation subscales, we found effect size that was on the higher border of intermediate effect sizes for fusion in T1 (Cohen, 1988). That is, this effect size almost entered into the zone of desired effect sizes. The effect size of the T2 cut-off was medium, on the low border of this range and all others had small effect sizes.

PTSS, Differentiation as a Function of Group, and Husbands' PTSS

Multiple hierarchical regressions revealed significant interaction between study group and husbands' PTSS in predicting the wives' PTSS total score at T1 and T2, intrusion at T1 and T2, and avoidance at T2 (Table 3). Probing the interaction between study group and husbands' PTSS for wives' PTSS total score at T1, revealed that although the husbands' PTSS predicted higher PTSS total score among both groups, this effect was stronger among the wives of former POWs wives, $B = 0.58$, $SE = 0.08$, $t = 7.07$, $p < .001$, compared with CVs' wives, $B = 0.25$, $SE = 0.13$, $t = 2.01$, $p = .046$.

Probing the interaction between study group and husbands' PTSS for wives' PTSS total score at T2, intrusion at T1 and T2, and avoidance at T2, revealed that among the wives of former POWs, the husbands' PTSS had significant effect on the wives' PTSS total score, $B = 0.37$, $SE = 0.09$, $t = 4.02$, $p < .001$; intrusion, $B = 0.53$, $SE = 0.08$, $t = 6.24$, $p < .001$ at T1; $B = 0.31$, $SE = 0.09$, $t = 3.49$, $p < .001$ at T2; and avoidance, $B = 0.35$, $SE = 0.09$, $t = 3.77$, $p < .001$. The higher a husband's PTSS score was, the greater his wife's symptoms were. However, among CVs' wives the effects of the husbands' PTSS on the wives' PTSS were nonsignificant for total score, $B = 0.01$, $SE = 0.14$, $t = 0.07$, $p = .943$; intrusion, $B = 0.09$, $SE = 0.13$, $t = 0.72$, $p = .474$ at T1, $B = -0.01$, $SE = 0.14$, $t = -0.10$, $p = .921$ at T2; and avoidance, $B = -0.12$, $SE = 0.14$, $t = -0.82$, $p = .415$. Analyses for wives' differentiation at T1 and T2 did not reveal any significant interaction between husbands' PTSS and study group (Table 4).

Associations Between PTSS and Differentiation Over Time

The relation between wives' differentiation and PTSS across time was examined by ARCL modeling strategy (Anderson, 1960). Results indicated that the theoretical model, containing all paths, was a good representation of the data: $\chi^2(1) = 2.62$, $p = .106$, $\chi^2/df = 2.62$, CFI = .99, TLI = .99, RMSEA = .11, SRMR = .01. Furthermore, a simpler and more parsimonious model was compared to the more general model, containing only the significant paths that were identified separately for veterans and CVs' wives. In the process of building this parsimonious model, we deleted insignificant paths sequentially,

Table 3
Regression Coefficients Predicting Wives' PTSS at T1 and T2 (n = 245)

		Predicting variables	*B*	*SE*	ΔR^2
PTSS total score (T1)	Step 1	Group	−0.08	0.10	.14
	Step 2	Husbands' PTSS (T1)	0.25*	0.13	.14
	Step 3	Group x Husbands' PTSS (T1)	0.37*	0.17	.01
Intrusion (T1)	Step 1	Group	−0.07	0.10	.14
	Step 2	Husbands' PTSS (T1)	0.09	0.13	.10
	Step 3	Group x Husbands' PTSS (T1)	0.48**	0.17	.02
Avoidance (T1)	Step 1	Group	−0.14	0.10	.08
	Step 2	Husbands' PTSS (T1)	0.26*	0.13	.13
	Step 3	Group x Husbands' PTSS (T1)	0.31	0.18	.01
Hyperarousal (T1)	Step 1	Group	0.01	0.11	.11
	Step 2	Husbands' PTSS (T1)	0.29*	0.13	.10
	Step 3	Group x Husbands' PTSS (T1)	0.18	0.18	.01
PTSS total score (T2)	Step 1	Group	−0.07	0.11	.07
	Step 2	Husbands' PTSS (T1)	0.01	0.14	.04
	Step 3	Group x Husbands' PTSS (T1)	0.40*	0.19	.02
Intrusion (T2)	Step 1	Group	0.05	0.11	.01
	Step 2	Husbands' PTSS (T1)	−0.01	0.14	.03
	Step 3	Group x Husbands' PTSS (T1)	0.36*	0.18	.01
Avoidance (T2)	Step 1	Group	−0.20	0.11	.02
	Step 2	Husbands' PTSS (T1)	−0.12	0.14	.03
	Step 3	Group x Husbands' PTSS (T1)	0.53**	0.19	.03
Hyperarousal (T2)	Step 1	Group	−0.03	0.11	.03
	Step 2	Husbands' PTSS (T1)	0.14	0.14	.04
	Step 3	Group x Husbands' PTSS (T1)	0.16	0.19	.00

Note. Table depicts a series of regression analyses. PTSS = posttraumatic stress symptoms; T1 = 30 years after the 1973 Yom Kippur War (2003); T2 = 38 years after the 1973 Yom Kippur War (2011).
*$p < .05$. **$p < .01$. ***$p < .001$.

one after the other, so that the most insignificant path was first deleted and so on.

Fit indices of the parsimonious model, containing only the significant paths found, indicated that it was an excellent representation of the data: $\chi^2(10) = 17.44$, $p = .065$, $\chi^2/df = 1.74$, CFI = .99, TLI = .97, RMSEA = .07, SRMR = .04, among the wives of former POWs. Comparing the fit indices for the two models favored the parsimonious model (the difference of the two χ^2s was nonsignificant, $\Delta\chi^2(9) = 14.82$, $p = .096$). Hence we proceeded with the parsimonious model for further analysis (Ledermann, Macho, & Kenny, 2011; McCoach & Black, 2008).

Next, we tested the theoretical model, $\chi^2(1) = 0.02$, $p = .882$, $\chi^2/df = 0.02$, CFI = 1.00, TLI = .1.00, RMSEA = .00, SRMR = .00, versus parsimonious model, $\chi^2(9) = 8.25$, $p = .509$, $\chi^2/df = .92$, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .03), among CVs' wives. As the comparison of the two models' fit, indicated nonsignificant difference between the models, $\Delta\ \chi^2(8) = 8.23$, $p = .411$, we proceeded with the simpler model.

To assess whether the bidirectional associations between differentiation and PTSS differ among the study groups, we ran a multigroup ARCL model containing only significant paths which were found in one group but not in the other. A multigroup constrained model, $\chi^2(19) = 36.31$, $p = .010$, $\chi^2/df = 1.91$, CFI = .99, TLI = .99, RMSEA = .06, SRMR = .03) revealed nonsignificant differences between the groups' models, $\Delta\chi^2(3) = 5.40$, $p = .145$. We used the 10-point difference in BIC values to indicate the best fitting model (Raftery, 1995) and according to this, the difference did not show better fit (ΔBCC = 1.1). Hence, the final ARCL model was conducted among the total sample without differentiating the groups.

The final model indicated an excellent fit, $\chi^2(8) = 17.81$, $p = .029$, $\chi^2/df = 2.13$, CFI = .99, TLI = .98, RMSEA = .07, SRMR = .02. As can be seen in Figure 1, the model revealed high stability over time, with those wives reporting high scores for PTSS or differentiation subscales in T1 being likely to report high levels of PTSS or differentiation subscales in T2. More importantly, the analyses revealed bidirectional associations between fusion self-differentiation and PTSS, so that the initial level of fusion predicted PTSS at T2, when controlling for PTSS stability, and vice versa; PTSS at T1 predicted higher levels of the fusion at T2, controlling for fusion stability.

Table 4
Regression Coefficients Predicting Wives' Differentiation at T1 and T2 (n = 245)

		Predicting variables	*B*	*SE*	ΔR^2
Fusion (T1)	Step 1	Group	−0.13	0.11	.05
	Step 2	Husbands' PTSS (T1)	0.26	0.14	.10
	Step 3	Group x Husbands' PTSS (T1)	0.23	0.18	.01
Balance (T1)	Step 1	Group	0.08	0.14	.01
	Step 2	Husbands' PTSS (T1)	−0.29*	0.15	.05
	Step 3	Group x Husbands' PTSS (T1)	0.02	0.19	.00
Cut-off (T1)	Step 1	Group	−0.11	0.12	.00
	Step 2	Husbands' PTSS (T1)	0.26	0.15	.04
	Step 3	Group x Husbands' PTSS (T1)	0.01	0.20	.00
Fusion (T2)	Step 1	Group	−0.07	0.10	.09
	Step 2	Husbands' PTSS (T1)	0.32*	0.13	.13
	Step 3	Group x Husbands' PTSS (T1)	0.22	0.18	.01
Balance (T2)	Step 1	Group	0.09	0.12	.01
	Step 2	Husbands' PTSS (T1)	−0.17	0.15	.03
	Step 3	Group x Husbands' PTSS (T1)	−0.09	0.20	.00
Cut-off (T2)	Step 1	Group	−0.01	0.11	.02
	Step 2	Husbands' PTSS (T1)	0.40**	0.14	.06
	Step 3	Group x Husbands' PTSS (T1)	−0.13	0.19	.00

Note. Table depicts a series of regression analyses. PTSS = posttraumatic stress symptoms; T1 = 30 years after the 1973 Yom Kippur War (2003); T2 = 38 years after the 1973 Yom Kippur War (2011).
*$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

The current study explored self-differentiation and PTSS among wives of traumatized former POWs and combatants. As hypothesized, the wives of former POWs endorsed higher levels of PTSS and lower self-differentiation, manifested in elevated fusion, at both time points. Indirect exposure to war captivity moderated the association between the husbands' PTSS and the wives' PTSS. Associations between the wives' self-differentiation and PTSS across time were bidirectional, as elevated fusion predicted high PTSS, and vice versa.

The present findings revealed higher levels of PTSS and fusion among the wives of former POWs wives compared with the wives of CVs. This was consistent with previous research (e.g., Greene et al., 2014). A person in an intimate relationship with a trauma survivor might identify and adopt the trauma survivor's distress (Figley, 1986). This may manifest not only in posttraumatic symptomatology (e.g., Rosenheck & Nathan, 1985), but also damage essential personality functions, such as differentiation. The wives of former POW tend to display more maladaptive patterns of differentiation, including enmeshment within the relationship.

Low differentiation among the wives of former POWs wives compared with combatants' wives may reflect the consequences of sharing one's life with a victim of deliberate torture. Exposure to continued interpersonal attacks during captivity might lead to profound interpersonal difficulties even decades after the trauma (Cook et al., 2004). Former POWs who find it difficult to maintain close, healthy relationships show deregulated interpersonal distance while also "... oscillating between intense attachment and terrified withdrawal" (Herman, 1992, p. 93). One might speculate that these unstable interpersonal patterns, characterizing traumatized former POWs, pass these patterns on to their spouses who subsequently struggle to keep a healthy interpersonal distance and show elevated fusion.

Alternatively, the present results may be understood as the wives' response to their husbands distress or as a way of coping with their traumatized husbands (Dekel, 2010). The husbands' emotional distress, resulting from war captivity, could elicit the wives' empathy, which leads to overinvolvement and enmeshment within the relationship. Moreover, wives' fusion might enable them to provide constant care for their husbands, and therefore feel more in control.

Living with a former POW not only burdens the wife via posttraumatic reactions and difficulties in self-differentiation, but also makes her susceptible to her husbands' distress. The current findings indicated that the husbands' elevated PTSS was more strongly related to higher levels of PTSS in the wives of former POWs, compared with CVs' wives. The present results are unique and suggest that the spousal transmission of trauma depends on the nature of the traumatic event. As mentioned, researchers and clinicians (e.g., Herman, 1992) suggest that primary traumatic exposure occurring within a relationship with the perpetrator, such as captivity, often leads to a unique form of posttraumatic stress disorder. This disorder includes deep and long-lasting difficulties in many domains of one's

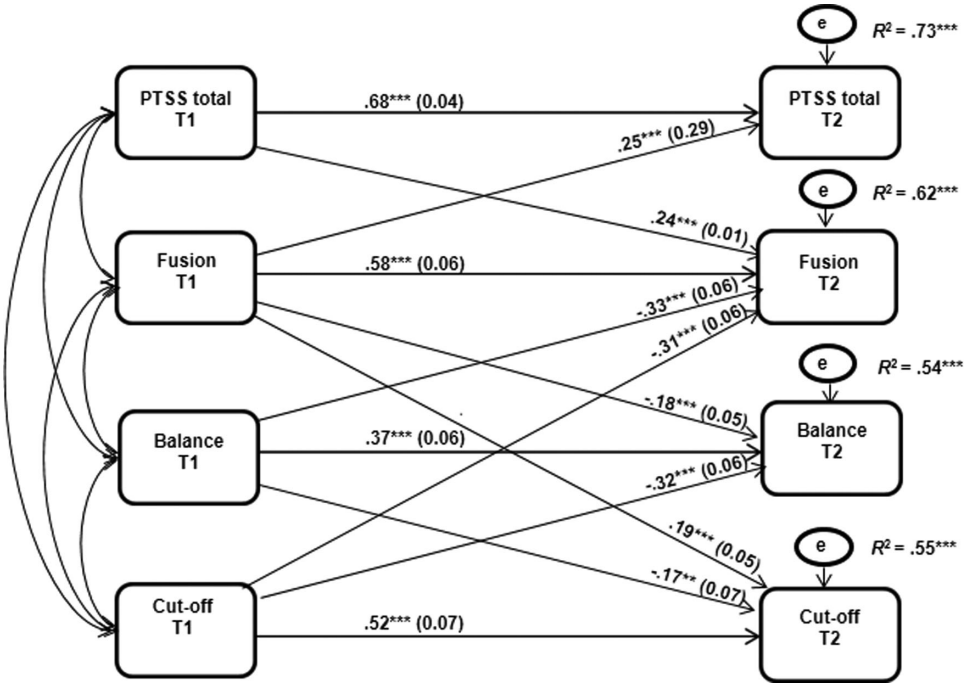

Figure 1. Autoregressive cross-lagged mofel assessing bidirectional relationships between posttraumatic stress symptoms (PTSS) and differentiation across time, among the wives of former prisoners or war (POWs) and the wives of controls. Curved lines represent covariates between constructs. Values represent standardized regression coefficients and standard errors. Explained variance is located above all dependent variables. Small circles reflect residuals (e). T1 = Time 1; T2 = Time2. $^{**}p < .01$. $^{***}p < .001$.

life and reflects damage in the basic elements of personality (i.e., Complex PTSD, e.g., Herman, 1992). Possibly, indirect exposure to the profound injuries of war captivity creates an alternate form of ST, a kind of "complex secondary traumatization." Complex ST is rooted in an intensified transmission of traumatic symptoms between the primary and secondary survivors, reflected in a broader and more severe impact for the indirect survivors.

Investigating the association between the wives' PTSS and self-differentiation over time revealed a reciprocal relationship. Fusion predicted higher PTSS in T2, and vice versa, among both groups. The present innovative results suggest a vicious cycle between poor differentiation and PTSS. Posttraumatic stress symptoms undermine the wives' ability to sustain high self-differentiation, increasing her risk for PTSS.

Our findings regarding the effects of fusion on PTSS are in line with Bowen's (1978) theory that poorly differentiated individuals are more emotionally reactive and may find it more difficult to remain calm under stressful conditions. Facing indirect exposure to the trauma of combat or war captivity, tendencies for fusion place the individual at risk for the contagion of distress and development of ST (Figley, 1986). At the same time, the results revealed that wives' PTSS has an adverse effect on their self-differentiation—intensifying their tendencies for enmeshment and fusion. The present findings are somewhat surprising in light of the theory regarding differentiation as a stable construct (Kerr & Bowen, 1988) and suggest that psychopathology manifesting in ST impedes the fundamental ability of differentiation. The emotional regulation difficulties characterizing PTSS (Tull, Barrett, McMillan, & Roemer, 2007) may account for unfavorable alterations in differentiation capacities among the wives of former POWs and combatants. Furthermore, the elevated emotional distress and helplessness resulting from PTSS (APA, 2000) could increase the wives' dependency on their husbands, thereby intensifying fusion tendencies.

Several limitations may have affected our findings. First, this study was based on self-report measures, which may be subjected to response biases and shared method variance. Second, the present study assessed husbands' PTSS only at one time point. As changes in husbands' PTSS over time might relate changes in the wives' PTSS over time, this poses a significant limitation. Third, this study explored PTSS based on the previous *DSM-IV* definition and not on the current *DSM-5* (APA, 2013). Fourth, results may be gender-specific and may not be generalized to male spouses. Fifth, we did not collect information concerning the wives' mental health and self-differentiation before marriage and before or immediately after their husbands' captivity. This limits our ability to control for these variables or to examine them over a longer period. Lastly, the present research did not incorporate data regarding potential mechanisms, such as wives' coping strategies and levels of identification with their husbands, which may underlie the relations between differentiation and PTSS. Future research should conduct such investigations.

Our results call attention to the mutual relations between self-differentiation and PTSS among secondary trauma victims, and thus have important implications for the theory and treatment of posttraumatic reactions among secondary trauma survivors. Our findings indicate that spouses with elevated fusion are particularly susceptible to PTSS when their partners are direct trauma victims, while trauma victims' spouses with PTSS may also suffer from impediments to differentiation. The present study points toward the need for clinical interventions that help spouses of prolonged interpersonal trauma victims maintain balanced differentiation and keep a healthy distance, thus enabling them to support their significant others while protecting themselves from traumatic contagion.

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