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The Danieli Inventory of Multigenerational Legacies of Trauma, Part II: Reparative Adaptational Impacts

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The impacts of the Holocaust on children of survivors have been widely investigated. However, consensus is limited, and no validated measures have been tailored with or to them. We aimed to develop and validate a scale that measures these specific impacts (Part II of the Danieli Inventory of Multigenerational Legacies of Trauma). We studied 484 adult children of survivors who participated in a cross-sectional web-based survey in English or Hebrew; of these, 191 participated in a clinical interview. Exploratory factor analyses of 58 items to reduce and refine the measure yielded a 36-item scale, Reparative Adaptational Impacts, that had excellent internal consistency ($\alpha = .91$) and congruence between English and Hebrew versions ($\varphi \geq .95$). Associations between impacts and SCID-based diagnoses of major depressive episode, posttraumatic stress disorder, and generalized anxiety disorder were moderate to strong ($ds = 0.48–0.89$). Strong associations also emerged between severity of offspring's reparative adaptational impacts and intensity of their parents' posttrauma adaptational styles (Multiple $R = .72$), with intensity of victim style, especially the mother's, having the strongest effect ($\beta = .31–.33$). Having both research and clinical relevance for assessing Holocaust survivors' offspring, future studies might investigate the scale's generalizability to other populations affected by mass trauma.

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The impacts of the Holocaust on succeeding generations have been widely investigated since the 1960s (Bachar, Canetti, & Berry, 2005; Barocas & Barocas, 1973; Chesler, 2005; Danieli, 1981b; Kellerman, 2001; Shrira, Palgi, Ben-Ezra, & Shmotkin, 2011; Solkoff, 1992; Sorscher & Cohen, 1997). A recent literature search on the effects of war and other major violent conflicts primarily on civilians and their yet-to-be-born children, using *intergenerational*, *multigenerational*, *transgenerational*, *cross-generational*, or *long-term* as key words, yielded 594,526 records (Devakumar, Birch, Osrin, Sondorp, & Wells, 2014). Findings of epigenetic changes in DNA expression possibly affecting adjustment in children of massively traumatized populations have furthered interest in studying multigenerational transmission of trauma (Kellermann, 2013; Yehuda, Bell, Bierer, & Schmeidler, 2008; Yehuda et al., 2014).

Still under debate, the impacts of the Holocaust on survivors' offspring appear to encompass a range of emotions, behaviors, attitudes, world views and relationships. Some studies have suggested pathological effects of the Holocaust on survivors' children; others, no effects. Sigal and Rakoff (1971) reported that survivors' children shared severe depressive symptomatology, school problems, and excessive quarreling with siblings. Particularly in the context of parental psychopathology, offspring experience increased anxiety and depression (Gangi, Talamo, & Ferracuti, 2009), posttraumatic stress disorder (Leen-Feldner et al., 2013; Sigal, 1999; Yehuda & Bierer, 2007), and low self-esteem (Gangi et al., 2009). When compared with controls, children of survivors tend to experience mistrust, have difficulties expressing emotions and regulating aggression (Eaton, Sigal, & Weinfeld, 1982; Felsen, 1998), and may have an impaired potential for posttraumatic growth following their own traumas (Dekel, Mandl, & Solomon, 2013). Using narrative methodology with a nonclinical sample, Wiseman, Metzl, and Barber (2006) reported elevated levels of anger and guilt.

Other studies suggested that survivors' offspring were not more prone to psychopathology than comparable controls (Bachar et al., 2005; Keinan, Mikulincer, & Rybnicki, 1988; Rieck, 1994; Russell, Plotkin, & Heapy, 1985). A meta-analysis of 32 nonclinical studies involving 4,418 children of survivors found no evidence of psychological maladjustment (van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2003), but it was criticized for including measures of psychopathology that were too broad and neglecting to assess family communication (Wiseman et al., 2006).

These inconsistencies may be because of differences in assessment and sampling methods, age or period effects or both, or heterogeneity of impact. Methodologically, most early studies were based on case reports (Axelrod, Schnipper, & Rau, 1980; Danieli, 1981a; Solkoff, 1981) or nonrandom small samples (Sigal, 1999). Most studies lacked comparison groups and relied on unvalidated or nonspecific instruments. The offspring's age at assessment may have affected results because of age effects: age effects may be related to changes in frequency or severity of distress as older offspring have experienced more normative events throughout their life-course. Period effects may be related to non-normative events such as wars or terror attacks. Heterogeneity of impacts on survivors' families' emotional and communication modes was highlighted by several authors (Auerhahn & Laub, 1998; Baider et al., 2000). Danieli (1981a, 1985) emphasized and described the heterogeneity of everyday adaptation and multidimensional quality of adjustment among Holocaust survivors and their offspring. Recent research (Danieli et al., 2014) supported the presence of three distinguishable posttrauma adaptational styles among survivors: victim, numb, and fighter. Briefly, victim style was evident in being stuck in the loss and trauma rupture, overprotectiveness, and emotional volatility and control; numb style was characterized by emotional isolation and detachment, intolerance of weakness, and conspiracy of silence in the family; and fighter style was manifest in valuing mastery and justice and valuing and maintaining Jewish (group) identity. Theory and research suggest that these styles would be predictive of an array of clinically and research-relevant outcomes across generations (Danieli, 1998).

We sought to develop a much-needed standardized, reliable, and valid questionnaire to comprehensively assess the range of psychological and social impacts experienced by adult offspring of Holocaust survivors. This article aims to (a) provide psychometric data, including factor structure and internal consistency, of the Danieli Inventory of Multigenerational Legacies of Trauma (the Danieli Inventory), Part II: Reparative Adaptational Impacts, that assesses children's perceptions of themselves; (b) examine associations between the newly developed measure and clinical diagnoses of major depressive episode (MDE), posttraumatic stress disorder (PTSD), generalized anxiety disorder (GAD), and substance use disorder (SUD); and (c) examine associations between the severity of reparative adaptational impacts and intensities of parents' adaptational styles.

This scale of reparative adaptational impacts was developed and tested as Part II of a three-part inventory. We named the scale Reparative Adaptational Impacts to indicate the core, perhaps unconscious, motivation of the second generation to undo and repair the past and heal their parents and themselves (Danieli, 1985). Part II can thus be used in combination with the Part I scales that assess survivor parents' posttrauma adaptational styles (Danieli et al., 2014) and the Part III questionnaire that covers four-generational family history and sociodemographics. To our knowledge, a measure comparable to the Danieli Inventory does not exist.

Method

Participants

This was a cross-sectional study involving a web-based survey and a clinical interview with adult children and grandchildren of survivors. Inclusion criteria were that at least one parent or grandparent had lived in one of the countries occupied by or under the control of the Nazi regime for any period during 1933–1945. The survivor population also includes people who had to leave their habitation because of the Nazi regime (Bogyeski, 2013). This broad definition ensured a wide range of trauma exposure severity among the ancestors. This variability, in turn, enhances the psychometric power of the data set to predict the full range of impacts on their offspring

The welcome page of the website was visited by 7,222 individuals, including the merely curious as well as those intending to participate. Of those, 2,809 viewed and 789 completed Part I, 712 completed Part II (90%), and 530 (67%) completed all three parts of the survey. Of those who completed Part II, the focus of the

present article, 484 were children of survivors (68%) and are included in the analyses reported here. The remaining survey respondents were grandchildren only (n = 42, 6%) or did not answer whether they were children or grandchildren of survivors (n = 186, 26%). There were no personal identifiers for the web-based part of the study.

Procedures

Participant recruitment and survey procedures. The first author invited Holocaust survivors' children and grandchildren to participate in a study on family adaptation to trauma. Information about the survey was disseminated via the web to and by general Jewish and survivors' and survivors' offspring organizations; these organizations had no knowledge about who participated. They may also have learned about the survey by word of mouth or discovered the website on their own.

Data were collected from this convenience sample between June 16 and December 24, 2012. The web survey was programmed using Gravity Forms (http://www.gravityforms.com). The welcome page stated in English and Hebrew that the site was being used purely for this research. The informed consent form on the next page described (a) the purpose of the study—to better understand how families are affected by members' life experiences; (b) what will be done—complete a questionnaire in approximately 45 min; (c) benefits—it will not benefit you directly; (d) confidentiality—information will not be shared in any way that personally identifies you; (e) risks—some questions are personal and might cause distress; you may stop at any time; (f) how findings will be used—to help develop a measure; and (g) contact information for the principal investigator in case of concerns or questions. The visitor then answered *yes* or *no* to the question, "Do you agree to participate?" Following their agreement to participate in the survey, participants answered *yes* or *no* to the question, "Are you interested in being interviewed by a mental health professional?" A subset of the children-of-survivors web survey sample (n = 191) agreed to be interviewed.

Clinical interview procedures. All 191 adult children of survivors who expressed interest in a subsequent clinical interview by phone were in fact interviewed. The clinical interviewers and supervisor were recruited as a group of consultants who were working on a clinical calibration study for the (United States) National Survey on Drug Use and Health (Aldworth et al., 2010).They had used the same data collection procedure (SCID by phone) and had demonstrated excellent interrater agreement. All interviewers had clinical doctoral degrees and expertise administering the Structured Clinical Interview for DSM–IV–TR Axis I Disorders Nonpatient Edition (SCID-I/NP; First, Spitzer, Gibbon, & Williams, 2002) in a research setting. All attended a 4-hr training session led by the clinical supervisor (RK) and the first author. Each interviewer conducted at least two certification interviews with real respondents to demonstrate proficiency.

A number of procedures, including ongoing training and supervision, ensured the safety of clinical interview respondents. A structured "distressed respondent" protocol provided definitions, examples of, and step-by-step instructions for responding to each of five types of distress, along a continuum of no risk of harm (respondent is agitated/upset) to imminent danger (respondent reports active suicidal thoughts, plan, and means to carry out plan). After an encounter with a distressed respondent, the clinical interviewer immediately contacted the supervisors to review details of the incident, assessment of risk, and application of the distressed respondent protocol. This process ensured proper responses to two participants who became distressed during their interviews but did not express intentions or plans to do harm. There were no cases of imminent danger.

The clinical interviews were conducted between January 27 and March 28, 2013. Clinical interview data were cleared of all identifying information except for respondent identification (ID) before they were forwarded to the data analyst for linking with the survey data.

Measures

Survey instrument and measures. In this article we focus on Part II of the Danieli Inventory: Reparative Adaptational Impacts. The full web-survey instrument consisted of three parts: the child's perception of his or her mother and father and upbringing (Part I); the child's perception of himself or herself (Part II), and four-generation family history and sociodemographic information (Part III). The instrument was translated from the original English into Hebrew, back-translated into English, and reconciled among raters who are fluent in both languages and both cultures.

The Part II questionnaire had 58 items scored on a 5-point Likert scale (*strongly disagree, disagree, neither way, agree, strongly agree*). These questions were generated based on the literature and nearly verbatim statements made by children of survivors about themselves in both clinical and community settings (Danieli, 1985; Felsen, 1998; Solomon, 1998). To pilot the questionnaire, the first author conducted cognitive interviews (Beatty & Willis, 2007; Collins, 2003) with 18 volunteer adult children or grandchildren of survivors. Poorly understood items or those not matching their experience were dropped; a few items suggested by interviewees were added. Any additions or changes were reconfirmed by the 18 participants. Examples of added items are "I feel drawn to stories of other children of survivors" and "The culture of the society we live in does not encourage expression of emotions." The final questionnaire was thus a collaborative effort between the researchers and the cognitive interviewees.

Respondents' perceptions of their parents were assessed with the Posttrauma Adaptational Style Scales, Part I of the Danieli Inventory (Danieli et al., 2015). These scales measure the child's perception of the intensity of each parent̀s victim style (30 items, mother α = .93, father α = .92), numb style (18 items, mother α = .89, father α = .89), and fighter style (12 items, mother α = .69, father α = .70). Part I scales may be found in the online Supplemental Appendix.

Clinical interview measures. Past 12-month DSM–IV MDE, PTSD, GAD, and SUD were assessed by using the SCID (Aldworth et al., 2010). Somatization disorder was assessed by using Othmer and DeSouza's (1985) screening test. This test was initially scored as the count of the number of symptoms (range 0–6) and subsequently dichotomized into 1 + symptoms versus 0. The interviewer recorded whether the respondent had ever re-

ceived psychological treatment and provided a past 12-month global assessment of functioning.

Data Analysis

Data were analyzed using exploratory factor analysis (EFA). Our goals were to (a) explore the structure of the data as it promised to yield new insights into the experience and self-perceptions of survivors' offspring, and (b) reduce the data set, both by identifying a smaller number of items that captures the emerging concepts and by organizing those items into interpretable subscales. Principal components were extracted using orthogonal rotation to analyze the 58 original items (Floyd & Widaman, 1995; Holgado-Tello, Chacón–Moscoso, Barbero–García, & Vila–Abad, 2010).

We created subscales on the basis of the initial factor analysis and used those as the input data in a higher order analysis. Lower order factors can often be distilled into fewer higher order factors to yield a hierarchical solution that is conceptually more meaningful (Floyd & Widaman, 1995). The number of factors retained was based on number of eigenvalues >1. Factor loadings > .40 were considered adequate. To ensure that conclusions were not determined by the specific methods of extraction, both principal axis factoring and maximum likelihood solutions were derived and compared. Because it was reasonable to anticipate that factors based on self-ratings would correlate, we specified an oblique solution. We then examined the internal consistency and descriptive statistics of the resulting scale.

To test the robustness of the instrument across English and Hebrew, we derived Tucker's congruence coefficient, an index of the similarity of factors that have been extracted in analyses of two groups (Lorenzo-Seva & ten Berge, 2006). A value in the range of .85–.94 corresponds to fair to good congruence, and a value of .95 or above suggests that the factors are virtually identical.

Results

Sample Description

Of the 484 children of survivors, 70% had two survivor parents. All participants spoke English (78%) or Hebrew (22%). Most participants were born in North America (42%), followed by Europe (36%) and Palestine/Israel (17%). Most were women (72%), highly educated (56% with graduate education), and married/partnered (77%). They averaged 60 years in age (*SD* = 9, range 33–84). More detail is provided in online Supplemental Table 1.

Factor Analyses

Means on the 58 self-ratings ranged from 2.0 (*SD* = 1.5), indicating highest disagreement with the statement, "I feared bringing children into the world" to 4.6 (*SD* = 0.8), indicating highest agreement with "I admire my parents' strength and courage."

The initial factor analysis of all 58 self-reflection items yielded 17 factors with eigenvalues >1. To reduce these data, we first reran the analysis specifying an 8-factor solution (eigenvalue >1.5, % variance explained >2.5%) and eliminated items that had not shown a loading ≥.40 on any of the top eight factors. Online Supplemental Table 2 shows results for these 46 items. In order of strength, factors were: Insecurity about One's Competence (16 items, explaining 12.4% of the variance); Reparative Protectiveness (7 items, 7.7%); Admiration of Parent's/s' Resilience (5 items, 6.0%); Need for Power or Control (4 items, 5.3%); Obsession with the Holocaust (3 items, 5.2%); Defensive Psychosocial Constriction (4 items, 5.1%); Immature Dependency (4 items, 4.6%); and Ruptured Generational Continuity (2 items, 3.7%). Summary scores for each lower order factor (e.g., Insecurity about One's Competence) were then calculated as the mean of all items with loadings ≥.40, giving each summary score a potential range of 1–5.

Using these eight summary scores as input, we derived two higher order factors with eigenvalues >1 explaining, respectively, 26.9% and 6.9% of the variance. In both the principal axis factoring solution and the maximum likelihood solution (see Table 1), Reparative Protectiveness, Insecurity about One's Competence, Defensive Psychosocial Constriction, Need for Power or Control, and Obsession with the Holocaust loaded on the first factor at criterion levels (≥.40). Immature Dependency, Insecurity about One's Competence, and Defensive Psychosocial Constriction loaded on the second factor at criterion levels, but two of these three measures had also loaded on the first higher order factor, with opposite signs.

The factor analyses were repeated separately for the 374 English- and 108 Hebrew-speaking children of survivors, and

Table 1. *Results From Higher Order Factor Analysis*

	Principal axis factoring solutions			Maximum likelihood solutions		
	Two-factor model		Single-factor model	Two-factor model		Single-factor model
Lower order factor	Factor 1	Factor 2		Factor 1	Factor 2	
Insecurity About One's Competence (1)	.71	−.51	.82	.70	−.52	.82
Reparative Protectiveness (2)	.78	−.09	.68	.77	−.11	.66
Admiration of Parents' Resilience (3)	.11	.29	.00	.12	.29	−.01
Need for Power or Control (4)	.50	−.13	.49	.51	−.13	.49
Obsession With the Holocaust (5)	.45	.10	.34	.46	.08	.35
Defensive Psychosocial Constriction (6)	.53	−.40	.62	.54	−.42	.63
Immature Dependency (7)	.28	−.56	.42	.28	−.56	.44
Broken Generational Linkages (8)	.10	−.31	.20	.10	−.30	.21

results were compared by using Tucker's congruence coefficient. Regardless of extraction method, Factor 1 was highly stable ($\varphi \geq .95$) and Factor 2 was highly unstable ($\varphi \leq .54$) across languages.

On the basis of these results, we reran the analysis specifying a single factor solution (see Table 1). Results were similar but not identical to those reported for the first higher order factor above. The primary differences were that loadings for Immature Dependency reached criterion, whereas loadings for Obsession with the Holocaust dropped slightly below criterion. The single factor solution was virtually identical in English and Hebrew ($\varphi = .97$).

Internal Consistency

We examined internal consistency of the 38 items included in any of the six lower order factors loading .35 or better on higher order Factor 1. After two items with low (8) or negative (6) item-to-total correlations were dropped, the alpha coefficient for the resulting 36-item scale was excellent (total sample $\alpha = .91$; English $\alpha = .91$, Hebrew $\alpha = .92$). The alpha was unchanged by deleting the items from lower order Factor 7, Immature Dependency, which was absent in the first factor in the two-factor solution. Similarly, the alpha was unchanged by deleting the items from lower order Factor 5, Obsession with the Holocaust, which loaded below criterion in the single-factor solution. Although these two subscales neither improved nor harmed the total scale, we retained them because they reflect key concepts in the literature and warrant further research.

Offspring's self-ratings could thus be parsimoniously captured in a 36-item scale, named Reparative Adaptational Impacts, based on the first (or only) higher order factor. We named the scale Reparative Adaptational Impacts to indicate the core, perhaps unconscious, motivation of the second generation to undo and repair the past and heal their parents and themselves (Danieli, 1985). Table 2 shows items organized by the strength of their item-total correlation, but in administration, the order would be randomized. Scored as the mean of the 36 component items, the scale has a potential range of 1–5. Both the mean and median were at the midpoint of the potential range ($M = 2.99$, $SD = 0.67$, $Mdn = 2.99$, observed span = 1.11–4.64), indicating that the norm for these impacts is of moderate severity. Neither variances nor means differed significantly by language: English $M = 3.02$, $SD = 0.66$; Hebrew $M = 2.89$, $SD = 0.64$; Levene's test for equality of variances, $F < 1$; $t(481) = 1.76$, *ns*.

Relationships With Psychological Disorder and Functioning

The subset of web survey participants ($n = 191$) who were interviewed by phone did not differ from web survey participants who declined to be interviewed ($n = 293$) in the distributions of language, parental status, gender, and marital status (married/partnered or not). They differed in (a) proportion from the oldest birth cohort (3% of interviewees vs. 14% of noninterviewees); (b) proportion with less than a college degree (6% vs. 12%); and (c) proportion employed in the helping professions (30% vs. 20%); see online Supplemental Table 1 for details. Clinical interviewees had higher reparative adaptational impacts ($M = 3.09$, $SD = 0.64$) than noninterviewees ($M = 2.93$, $SD = 0.66$), $t(481) = 2.63$, $p < .01$.

Table 3 shows the means of reparative impacts by SCID measures. Compared to interviewees who never received psychological treatment, interviewees who had received treatment at some point during their lives reported more severe impacts. Compared to interviewees without diagnoses, interviewees with past 12-month MDE, PTSD, or GAD reported more severe impacts. There were no cases of SUD. Interviewees with one or more somatic symptoms reported more severe impacts than interviewees with no somatic symptoms.

Effect sizes (Cohen, 1992) were large for past treatment, $d = 0.90$, and GAD, $d = 0.89$. The effects were medium for all other tests: ds = 0.48 for MDE, 0.63 for PTSD, and 0.60 for the presence of any somatic symptom.

Reparative adaptational impacts were strongly related to the clinicians' global assessment of functioning, $r = .52$, $p < .001$. (An $r \geq .50$ is considered a large effect; Cohen, 1992).

Relationship to Parents' Posttrauma Adaptational Styles

Table 4 shows (a) correlations and multiple correlations of reparative adaptational impacts with intensities of mother's and father's victim, numb, and fighter adaptational styles and (b) regression coefficients, capturing independent effects of specific styles with others controlled. Multiple correlations were statistically significant, with the set of both parents' adaptational style scales explaining almost half of the variance in adult children's reparative adaptational impacts. Victim style had the strongest independent effect, followed by numb style within the separate sets of mother and father measures. In multivariate analyses, the intensity of parents' fighter styles had neither a positive nor a negative effect overall on the severity of participants' reparative adaptational impacts. When mother and father measures were analyzed together, the effects of mother's victim style and father's victim style were equivalent, and mother's numb style had an additional effect. When participant gender, age, and education were controlled, the betas were substantially unchanged.

Discussion

The present article reports on the development and validation of a measure of the impacts of the Holocaust on adult children of survivors. Factor analyses revealed these impacts to be varied and multifaceted, including the potential for offspring to be insecure about their own competence, to feel the need to protect their parents, to be alienated from their peers, to be obsessed with the Holocaust, to feel the need to always be in control, and to be immaturely dependent. Yet, we created a single 36-item scale that captured this content, showed excellent internal consistency, and exhibited congruence in factor structure between English and Hebrew versions.

On average, this sample reported moderate levels of reparative adaptational impacts, but scores covered almost the entire potential range (1–5). This distribution of scores suggests that the scale encompasses a wide range of adaptational impacts. This variability, in turn, enhances the psychometric power and clinical applicability of the instrument.

We examined the validity of the new scale by testing its associations with theoretically related variables, both in the present

Table 2. *Danieli Inventory of Multigenerational Legacies of Trauma, Part II: Reparative Adaptational Impacts*

New item no.	Lower order factor no.	Text	Item total correlation
1	1	Even when successful, I feel forlorn	.68
2	1	Sometimes I felt overwhelming despair when I didn't live up to my parent's/s' expectations	.61
3	1	Contentment is a foreign concept to me	.61
4	1	I expect people to take advantage of me	.57
5	2	I have sometimes felt a need to make up for my family's losses	.54
6	1	I worry that others will look down on me	.53
7	1	I had to seek guidance outside the family about how to live my life	.53
8	1	I am very sensitive to being labeled	.52
9	1	I find it difficult to say goodbye	.52
10	1	I am very sensitive to being criticized	.51
11	2	Sometimes I felt I had to fill in for murdered family members	.51
12	1	My first reaction to a new task is, "I can't. . ."	.49
13	1	I often experience physical pain (headache, backache, etc.) when I feel difficult, stressful emotions	.49
14	1	It is very hard for me to just relax	.48
15	1	I find it difficult to delegate responsibility to others	.48
16	2	I feel responsible for my parent's/s' happiness	.46
17	6	I am afraid to imagine what led to my parent's/s' numbness	.43
18	2	I would feel I had betrayed my family and myself if I didn't respond to any negative remark about my faith/group/race/ethnic/social group	.43
19	1	I find it uncomfortable to be in a position of authority	.42
20	4	It is important for me to feel powerful	.41
21	2	When there is illness in the house, I feel it is my responsibility to make sure that every detail is taken care of	.41
22	7	I have often resorted to alcohol, substance abuse, sex, or food to soothe myself	.40
23	1	Most days I wake up looking forward to life REVERSED	.40
24	6	The culture of the society we live in does not encourage expression of emotions	.38
25	5	I am obsessed with watching and reading everything about my parent's/s' experiences	.38
26	6	My peers' concerns often seemed frivolous to me	.37
27	2	I think of my parents as vulnerable	.37
28	4	It is important to me to be in total control	.37
29	6	I fear(ed) bringing children into the world	.36
30	4	I test my ability to survive by continuously taking risks	.35
31	6	I felt cheated when I found out my family's history from others	.34
32	5	I feel drawn to the stories of other children of survivors	.33
33	1	In my fantasies, I would have never survived what my parent(s) had gone through	.33
34	5	I watch Holocaust/genocide/war-related films and documentaries incessantly	.31
35	2	I did my best not to burden my parent(s) with my own problems/issues	.31
36	7	I often rely on my parent(s) to rescue me financially	.26

Note. Copyright, Yael Danieli, 2015. The questionnaire is available upon request from Yael Danieli, yaeld@aol.com Items from six lower order factors were included in the final scale: (1) Insecurity About One's Competence; (2) Reparative Protectiveness; (4) Need for Power or Control; (5) Obsession With the Holocaust; (6) Defensive Psychosocial Constriction; and (7) Immature Dependency.

(clinical diagnoses) and in the past (parents' posttrauma adaptational styles). Reparative Adaptational Impacts showed moderate to strong associations with SCID diagnoses of MDE, PTSD and GAD. The new scale thus identifies Holocaust-relevant factors that increase risk for psychopathology. More and more, however, psychopathology and personality are seen as existing along the same dimensions (Krueger & Markon, 2014). That is, when a personality factor rises so as to cause impairments, it becomes pathological. As our data indicate, this new scale is therefore tied to both personality and psychopathology, providing data that can be clinically useful and pointing to needed future research. Reparative adaptational impacts are likely to be inversely related to protective personality constructs such as social support seeking and self-efficacy. While they were not measured in our study, future research should examine these associations.

The severity of offspring's reparative adaptational impacts was strongly related to the intensity of parents' victim style and, to a lesser extent, the intensity of parents' numb style. However, it was not related to the intensity of parents' fighter style. We theorize that the victim style most authentically reflects the essence of the trauma rupture. Further, still feeling threatened by the outside world, the more inner-directed numb- and victim-style parents seem to be impermeable not only to the world's actual, potential, or imagined dangers, but also to its possible buffering, health- or growth-promoting opportunities for themselves and their children.

Although both mothers' and fathers' victim styles contributed equally to offspring's reparative adaptational impacts, the additional effect of mothers' numb style made the overall effect of mothers stronger. Yehuda et al. (2008) similarly showed that

Table 3. *Means on Reparative Adaptational Impacts by Clinical Interview Measures (N = 191)*

SCID or interview measure	Absent			Present			
	n	*M*	*SD*	*n*	*M*	*SD*	*t*(189)
Lifetime mental health treatment	30	2.61	0.59	160	3.18	0.60	4.84***
Past year major depressive episode	164	3.04	0.65	27	3.35	0.50	2.81**
Past year posttraumatic stress disorder	177	3.06	0.64	14	3.46	0.50	2.28*
Past year generalized anxiety disorder	156	2.98	0.63	35	3.55	0.44	6.40***
One or more somatic symptoms	80	2.86	0.65	111	3.25	0.58	4.30***

* $p < .05$. ** $p < .01$. *** $p < .001$.

maternal PTSD had a stronger effect than paternal PTSD on the child-of-survivor's risk for PTSD.

Limitations of the study include its reliance on participants' retrospective recall. An individual's report might not be stable over time. Adult children's perceptions of themselves and their parents may be tempered by age, time, and experience (e.g., Danieli, 1998; Keller, 1988; Schwartz, Dohrenwend, & Levav, 1994). Because this convenience sample was not representative of all children of Holocaust survivors and overrepresented women, sampling bias cannot be ruled out. Clearly, those with greater reparative adaptational impacts or in the helping professions or both were more likely to participate in the clinical interview. As the sample was highly educated, we cannot be sure that the questionnaire would work as well with less educated people. Without a control group of children of parents who did not experience the Holocaust, we do not know that the reparative adaptational impacts measured are specific to adult children of Holocaust survivors. The SCID version used (Aldworth et al., 2010) provided past 12-month, not lifetime, diagnoses. This may have led to underestimating associations between reparative adaptational impacts and the diagnoses studied. Additionally, the use of the DSM–IV-based SCID does not consider the revisions in DSM 5.

Study strengths include the importance and timeliness of attempts to measure intergenerational effects of trauma; involving the target group by cognitive interviewing; obtaining a community sample for the web survey and a sizable subsample for clinical interviews; the retention of interest by the clinical subsample despite a few months wait between completing the web survey and the clinical interview; having both English- and Hebrew-speakers and comparing their results; and using the SCID to provide data relevant to validating the first ever post-Holocaust-specific measure to assess the multidimensional impacts of the Holocaust on children of survivors. Nonetheless, the scale captures not only psychopathology but the rich texture of daily life as reflected in emotions, behaviors, attitudes, world views, and relationships.

Our findings require replication, but our scale provides a useful research tool for exploring factors that influence multigenerational and multidimensional legacies of the Holocaust. With proper adaptations, our instrument could be used to study adult children of survivors of mass trauma other than the Holocaust, including other genocides, crimes against humanity, war crimes, and ethnic cleansing, such as Armenia, Cambodia, Bosnia, and Rwanda, to name but a few. Used in combination with Part III of the Danieli Inventory, which provides a four-generation family history and sociodemographic description, the scale's greatest potential lies in facilitating research on both mechanisms of transmission and moderators of impacts. As for the purpose of identifying mechanisms of transmission, our data suggest that parents' posttrauma adaptational styles may partially explain how parents' traumatic experiences are transmitted to their children. When combined with the analyses of stable epigenetic markers such as DNA methylation (Yehuda et al., 2014), this scale presents a considerable improvement over extant practice of using available personality checklists intended for the general population. To identify moderators of impacts, comparative studies might address gender, age and cross-cultural differences. Adult children of Holocaust survivors could be compared to adult children of survivors of other forms of trauma (e.g., combat) or to children of parents who were not exposed to trauma; such comparisons would help to demonstrate the extent to which reparative adaptational impacts are unique to the aftermath of the Holocaust or exist in other traumatized families.

Table 4. *Associations Between Offspring's Reparative Adaptational Impacts and Parents' Posttrauma Adaptational Styles*

Independent variables	*r* or *R*	β controlling for only other mother or father scales	β controlling for all other mother and father scales
Mother's adaptational styles (set of 3, Multiple *R*)	.68***		
Victim style intensity	.65***	.57***	.31***
Numb style intensity	.47***	.18***	.15**
Fighter style intensity	.19***	.03	.08
Father's adaptational styles (set of 3, Multiple *R*)	.67***		
Victim style intensity	.63***	.60***	.33***
Numb style intensity	.40***	.13**	.03
Fighter style intensity	.18***	.01	−.07
Mother and father styles (set of 6, Multiple *R*)	.72***		

* $p < .05$. ** $p < .01$. *** $p < .001$.

In summary, we have created a new 36-item scale of reparative adaptational impacts that has interpretable structure, excellent internal consistency, congruence between English and Hebrew versions, sensitivity to individual differences, and criterion validity as suggested by its associations with both SCID diagnoses and parents' posttrauma adaptational styles. As noted above, we believe the scale may facilitate research on both mechanisms and moderators of transmission. Providing insights into the long-lasting impacts of the Holocaust in subsequent generations, the scale could also guide clinicians working with this population in identifying and exploring the meanings and roots of their patients' life experiences.

Keywords: Holocaust; trauma; children of survivors; multigenerational legacies of trauma; scale development

References

Aldworth, J., Colpe, L. J., Gfroerer, J. C., Novak, S. P., Chromy, J. R., Barker, P. R., . . . Spagnola, K. (2010). The National Survey on Drug Use and Health Mental Health Surveillance Study: Calibration analysis. *International Journal of Methods in Psychiatric Research, 19*(Suppl 1), 61–87. http://dx.doi.org/10.1002/mpr.312

Auerhahn, N. C., & Laub, D. (1998). Intergenerational memory of the Holocaust. In Y. Danieli (Ed.), *International handbook of multigenerational legacies of trauma* (pp. 21–41). New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4757-5567-1_2

Axelrod, S., Schnipper, O. L., & Rau, J. H. (1980). Hospitalized offspring of holocaust survivors. Problems and dynamics. *Bulletin of the Menninger Clinic, 44,* 1–14.

Bachar, E., Canetti, L., & Berry, E. M. (2005). Lack of long-lasting consequences of starvation on eating pathology in Jewish Holocaust survivors of Nazi concentration camps. *Journal of Abnormal Psychology, 114,* 165–169. http://dx.doi.org/10.1037/0021-843X.114.1.165

Baider, L., Peretz, T., Hadani, P. E., Perry, S., Avramov, R., & De-Nour, A. K. (2000). Transmission of response to trauma? Second-generation Holocaust survivors' reaction to cancer. *The American Journal of Psychiatry, 157,* 904–910. http://dx.doi.org/10.1176/appi.ajp.157.6.904

Barocas, H. A., & Barocas, C. B. (1973). Manifestations of concentration camp effects on the second generation. *The American Journal of Psychiatry, 130,* 820–821. http://dx.doi.org/10.1176/ajp.130.7.820

Beatty, P. C., & Willis, G. B. (2007). Research synthesis: The practice of cognitive interviewing. *Public Opinion Quarterly, 71,* 287–311. http://dx.doi.org/10.1093/poq/nfm006

Bogyeski, Y. (2013). *Historical overview of the "Holocaust Survivor" notion* (in Hebrew). Jerusalem, Israel: The Knesset Research and Information Center.

Chesler, B. E. (2005). Implications of the Holocaust for eating and weight problems among survivors' offspring: An exploratory study. *European Eating Disorders Review, 13,* 38–47. http://dx.doi.org/10.1002/erv.589

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155–159. http://dx.doi.org/10.1037/0033-2909.112.1.155

Collins, D. (2003). Pretesting survey instruments: An overview of cognitive methods. *Quality of Life Research, 12,* 229–238. http://dx.doi.org/10.1023/A:1023254226592

Danieli, Y. (1981a). Differing adaptational styles in families of survivors of the Nazi holocaust. *Children Today, 10,* 6–10.

Danieli, Y. (1981b). The Group Project for Holocaust survivors and their children. *Children Today, 10,* 11, 33.

Danieli, Y. (1985). The treatment and prevention of long-term effects and intergenerational transmission of victimization: A lesson from Holocaust survivors and their children. In C. R. Figley (Ed.), *Trauma and its wake* (pp. 295–313). New York, NY: Brunner/Mazel.

Danieli, Y. (Ed.). (1998). *International handbook of multigenerational legacies of trauma*. New York, NY: Plenum Press.

Danieli, Y., Norris, F., Lindert, J., Paisner, V., Engdahl, B., & Richter, J. (2015). *The Danieli Inventory of Multigenerational Legacies of Trauma, Part I: Survivors' posttrauma adaptational styles in their children's eyes*. Manuscript under review.

Dekel, S., Mandl, C., & Solomon, Z. (2013). Is the Holocaust implicated in posttraumatic growth in second-generation Holocaust survivors? A prospective study. *Journal of Traumatic Stress, 26,* 530–533. http://dx.doi.org/10.1002/jts.21836

Devakumar, D., Birch, M., Osrin, D., Sondorp, E., & Wells, J. C. (2014). The intergenerational effects of war on the health of children. *BMC Medicine, 12,* 57.

Eaton, W. W., Sigal, J. J., & Weinfeld, M. (1982). Impairment in Holocaust survivors after 33 years: Data from an unbiased community sample. *The American Journal of Psychiatry, 139,* 773–777. http://dx.doi.org/10.1176/ajp.139.6.773

Felsen, I. (1998). Transgenerational transmission of effects of the Holocaust: The North American research perspective. In Y. Danieli (Ed.), *International handbook of multigenerational legacies of trauma* (pp. 43–68). New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4757-5567-1_3

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002). *Structured clinical interview for DSM–IV–TR Axis I disorders, Research version, Non-patient edition* (SCID-I/NP). New York, NY: New York State Psychiatric Institute, Biometrics Research Department.

Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment, 7,* 286–299. http://dx.doi.org/10.1037/1040-3590.7.3.286

Gangi, S., Talamo, A., & Ferracuti, S. (2009). The long-term effects of extreme war-related trauma on the second generation of Holocaust survivors. *Violence and Victims, 24,* 687–700. http://dx.doi.org/10.1891/0886-6708.24.5.687

Holgado-Tello, F. P., Chacón-Moscoso, S., Barbero-García, I., & Vila-Abad, E. (2010). Polychoric versus Pearson correlations in exploratory and confirmatory factor analysis of ordinal variables. *Quality & Quantity: International Journal of Methodology, 44,* 153–166. http://dx.doi.org/10.1007/s11135-008-9190-y

Keinan, G., Mikulincer, M., & Rybnicki, A. (1988). Perception of self and parents by second-generation Holocaust survivors. *Behavioral Medicine, 14,* 6–12. http://dx.doi.org/10.1080/08964289.1988.9935117

Keller, R. (1988). Children of Jewish Holocaust survivors: Relationship of family communication to family cohesion, adaptability and satisfaction. *Family Therapy, 15,* 223–237.

Kellerman, N. P. (2001). Psychopathology in children of Holocaust survivors: A review of the research literature. *The Israel Journal of Psychiatry and Related Sciences, 38,* 36–46.

Kellermann, N. P. (2013). Epigenetic transmission of holocaust trauma: Can nightmares be inherited? *The Israel Journal of Psychiatry and Related Sciences, 50,* 33–39.

Krueger, R. F., & Markon, K. E. (2014). The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annual Review of Clinical Psychology, 10,* 477–501. http://dx.doi.org/10.1146/annurev-clinpsy-032813-153732

Leen-Feldner, E. W., Feldner, M. T., Knapp, A., Bunaciu, L., Blumenthal, H., & Amstadter, A. B. (2013). Offspring psychological and biological correlates of parental posttraumatic stress: Review of the literature and research agenda. *Clinical Psychology Review, 33,* 1106–1133. http://dx.doi.org/10.1016/j.cpr.2013.09.001

Lorenzo-Seva, U., & ten Berge, J. M. F. (2006). Tucker's congruence coefficient as a meaningful index of factor similarity. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences, 2,* 57–64.

Othmer, E., & DeSouza, C. (1985). A screening test for somatization disorder (hysteria). *The American Journal of Psychiatry, 142,* 1146–1149. http://dx.doi.org/10.1176/ajp.142.10.1146

Rieck, M. (1994). The psychological state of Holocaust survivors' offspring: An epidemiological and psychodiagnostic study. *International Journal of Behavioral Development, 17,* 649–667. http://dx.doi.org/10.1177/016502549401700405

Russell, A., Plotkin, D., & Heapy, N. (1985). Adaptive abilities in nonclinical second-generation Holocaust survivors and controls: A comparison. *American Journal of Psychotherapy, 39,* 564–579.

Schwartz, S., Dohrenwend, B. P., & Levav, I. (1994). Nongenetic familial transmission of psychiatric disorders? Evidence from children of Holocaust survivors. *Journal of Health and Social Behavior, 35,* 385–402. http://dx.doi.org/10.2307/2137216

Shrira, A., Palgi, Y., Ben-Ezra, M., & Shmotkin, D. (2011). Transgenerational effects of trauma in midlife: Evidence for resilience and vulnerability in offspring of Holocaust survivors. *Psychological Trauma: Theory, Research, Practice, and Policy, 3,* 394–402. http://dx.doi.org/10.1037/a0020608

Sigal, J. (1999). Posttraumatic stress disorder in children of Holocaust survivors. *The American Journal of Psychiatry, 156,* 1295.

Sigal, J. J., & Rakoff, V. (1971). Concentration camp survival: A pilot study of effects on the second generation. *Canadian Psychiatric Association Journal, 16,* 393–397.

Solkoff, N. (1981). Children of survivors of the Nazi Holocaust: A critical review of the literature. *American Journal of Orthopsychiatry, 51,* 29–42. http://dx.doi.org/10.1111/j.1939-0025.1981.tb01345.x

Solkoff, N. (1992). The Holocaust: Survivors and their children. In M. Başoglu (Ed.), *Torture and its consequences: Current treatment approaches* (pp. 136–148). New York, NY: Cambridge University Press.

Solomon, Z. (1998). Transgenerational effects of the Holocaust: The Israeli research perspective. In Y. Danieli (Ed.), *International handbook of multigenerational legacies of trauma* (pp. 69–83). New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4757-5567-1_4

Sorscher, N., & Cohen, L. J. (1997). Trauma in children of Holocaust survivors: Transgenerational effects. *American Journal of Orthopsychiatry, 67,* 493–500. http://dx.doi.org/10.1037/h0080250

van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Sagi-Schwartz, A. (2003). Are children of Holocaust survivors less well-adapted? A meta-analytic investigation of secondary traumatization. *Journal of Traumatic Stress, 16,* 459–469. http://dx.doi.org/10.1023/A:1025706427300

Wiseman, H., Metzl, E., & Barber, J. P. (2006). Anger, guilt, and intergenerational communication of trauma in the interpersonal narratives of second generation Holocaust survivors. *American Journal of Orthopsychiatry, 76,* 176–184. http://dx.doi.org/10.1037/0002-9432.76.2.176

Yehuda, R., Bell, A., Bierer, L. M., & Schmeidler, J. (2008). Maternal, not paternal, PTSD is related to increased risk for PTSD in offspring of Holocaust survivors. *Journal of Psychiatric Research, 42,* 1104–1111. http://dx.doi.org/10.1016/j.jpsychires.2008.01.002

Yehuda, R., & Bierer, L. M. (2007). Transgenerational transmission of cortisol and PTSD risk. *Progress in Brain Research, 167,* 121–135. http://dx.doi.org/10.1016/S0079-6123(07)67009-5

Yehuda, R., Daskalakis, N. P., Lehrner, A., Desarnaud, F., Bader, H. N., Makotkine, I., . . . Meaney, M. J. (2014). Influences of maternal and paternal PTSD on epigenetic regulation of the glucocorticoid receptor gene in Holocaust survivor offspring. *The American Journal of Psychiatry, 171,* 872–880. http://dx.doi.org/10.1176/appi.ajp.2014.13121571