American Journal of Orthopsychiatry
2016, Vol. 86, No. 6, 639–651

http://dx.doi.org/10.1037/ort0000145

Multigenerational Legacies of Trauma: Modeling the What and How of Transmission

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To operationalize the theory of *Trauma and the Continuity of Self: A Multidimensional, Multidisciplinary, Integrative Framework* (Danieli, 1998), we created a testable model using factors in Holocaust survivors' lives that may have affected their offspring's adaptation. A web-based sample of 422 adult children of survivors completed a 3-part inventory assessing multigenerational legacies of trauma. To explain the severity of the child's *reparative adaptational impacts*, we conducted hierarchical regression analyses (Phase 1) and path analyses (Phase 2). We hypothesized that these impacts followed largely from the (child-reported) intensities of parents' victim, numb, and fighter *posttrauma adaptational styles*. These styles, in turn, followed from family history and post-Holocaust family milieu. With all effects of family history and milieu on offspring specified as indirect (through parents' victim styles), the initial path model fit the data well with one exception: Broken generational linkages had direct as well as indirect effects. While survivors' Holocaust experiences—especially internment—had significant indirect effects on their children, each component of post-Holocaust family milieu had one or more associations with mothers' and fathers' victim, numb, and/or fighter styles. The strongest relationships emerged for broken generational linkages—a risk factor for negative effects—and sociocultural setting (living in Israel rather than North America)—a protective factor. Because the healing processes that underlie observed effects of family milieu are malleable, survivors' and offspring's suffering might be reduced through efforts to recapture meaning, purpose, identity, connectedness of past, present and future, and attachments to community and place.

We present a multidimensional integrative model of how selected elemental historical and demographic factors in the lives of Holocaust survivors affected their offspring's adaptation. Several of these factors have been examined or discussed in the abundant literature on children of Holocaust survivors that began accumulating in the mid-1960s (e.g., Bachar, Canetti, & Berry, 2005; Barocas & Barocas, 1973; Chesler, 2005; Danieli, 1981; Giladi & Bell, 2013; Rakoff, Sigal, & Epstein, 1966; Shrira, Palgi, Ben-Ezra, & Shmotkin, 2011; Sigal & Weinfeld, 1989; Solkoff, 1992; Sorscher & Cohen, 1997; Steinberg, 1989). We aimed to build on and integrate prior work by simultaneously examining multiple factors previously hypothesized to influence survivors and their offspring.

Massive trauma causes such diverse and complex destruction that only a multidimensional, multidisciplinary, integrative framework can adequately describe it. Theoretically, the impetus for this paper was *Trauma and the Continuity of Self: A Multidimensional, Multidisciplinary, Integrative Framework* (TCMI; Danieli, 1998). This framework aims to comprehensively describe the complex nature of surviving massive trauma and the diverse ways of adapting to life's challenges in its aftermath. Its overarching features are its focus on identity, multidimensionality, the ubiquitous conspiracy of silence in the aftermath of trauma, and continuity/rupture. An individual's identity involves a complex interplay of multiple spheres or systems, including but not limited to the biological, intrapsychic, familial, communal, economic, cultural, national, and international (see also Archibald, Long, Miller, & Tuddenham,

This article was published Online First January 14, 2016.

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This study was supported by grants from the Conference on Jewish Material Claims Against Germany, the Anti-Defamation League and Richard Rockefeller, MD. The authors wish to express profound gratitude to the rest of the study team: John Fairbank, Jenni Frumer, Florabel Kinsler, Jutta Lindner, Sigal Pearl Naim, Vera Paisner, Julia Richter, William E. Schlenger, and Karen Judd Smith.

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1962; Cuthbert, 2014; Cuthbert & Insel, 2013; Dekel & Goldblatt, 2008; Engel, 1977, 1996; Harvey, 1996). These systems dynamically coexist along the time dimension to create a continuous conception of life from past through present to future. Exposure to trauma causes a rupture, a state of being "stuck" in this free flow, which Danieli (1998) called fixity. The time, duration, extent, and meaning of the trauma for the individual and the survival mechanisms/strategies used to adapt to it will determine the elements and degree of rupture, fragmentation and disorientation—the severity of the fixity. It is further exacerbated by postvictimization traumata, variously described as the *conspiracy of silence*, that is, survivors' reaction to societal indifference to, avoidance, and denial of their Holocaust experiences (Danieli, 1982, 1985, 1993); the *third traumatic sequence* in child survivors of the Holocaust (Keilson, 1992); the *second wound* in the context of crime (Symonds, 1980); *homecoming stress* in veterans (Johnson et al., 1997); and *cutoff* within the family system (Bowen, 1978). These descriptions map dynamic interactions among the extrafamilial, intrafamilial, and intrapsychic identity dimensions to explain their detrimental consequences for survivors and their offspring.

The resulting fixity may render the victim/survivor vulnerable, particularly to further trauma ruptures, throughout the life cycle (Danieli, 1997; Krell, 1985; Ohana, Golander, & Barak, 2014; Scharf, 2007; Schwartz, Dohrenwend, & Levav, 1994). It may also render immediate reactions to the trauma chronic. In the extreme, survival strategies generalize to a way of life and become enduring *posttrauma adaptational styles*. These adaptational styles will thus shape the survivors' family lives and, in turn, their children's upbringing, emotional development, identity, and beliefs about themselves, their peers, their societies, and the world (Chaitin, 2003; Danieli, 1985, 1998; Felsen, 1998; Hantman & Solomon, 2007; Hantman, Solomon, & Horn, 2003; Rich, 1982; Scharf & Mayseless, 2011; Sigal & Weinfeld, 1989). And the parent's fixity becomes the child's biopsychosocial milieu. The focus on the intergenerational impacts of adaptational styles augments other perspectives, such as psychoanalytic (e.g., Auerhahn & Laub, 1998; Bergman & Jucovy, 1982; Kogan, 2002); family system (e.g., Bowen, 1978); relationships/attachment (Alford, 2015; Bar-On et al., 1998; Sagi, Van Ijzendoorn, Joels, & Scharf, 2002); symptomatology (concentration camp/survivor syndrome, e.g., Eitinger, 1980; Krystal & Danieli, 1994; Krystal & Niederland, 1968; PTSD, e.g., Baranowsky, Young, Johnson-Douglas, Williams-Keeler, & McCarrey, 1998; Lambert, Holzer, & Hasbun, 2014; Leen-Feldner et al., 2013; Yehuda & Bierer, 2007); and neurobiology (e.g., Kellermann, 2013; Yehuda & Bierer, 2007; Yehuda et al., 2014).

Our challenge was to operationalize the complex TCMI theory, defining paths and mechanisms of trauma transmission, thereby creating a testable model. The model, illustrated in Figure 1, attempts to explain the severity of the child's *reparative adaptational impacts*. This construct expresses the core, perhaps unconscious, motivation of the second generation to undo and repair the

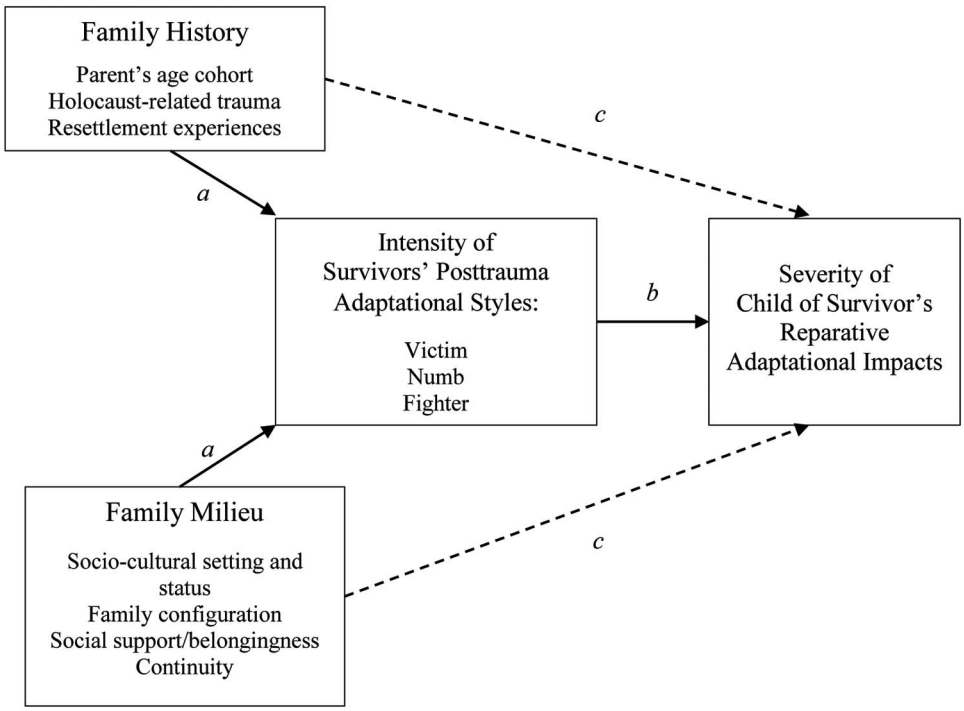

Figure 1. Conceptual framework for data-based integrative modeling of multigenerational transmission of trauma in families of Holocaust survivors. Solid lines designate the hypothesized indirect effects ($a \times b$): family history and family milieu influence the intensities of parents' posttrauma adaptational styles that, in turn, influence the severity of their children's reparative adaptational impacts. Dotted lines indicate the potential for family history and milieu to have direct effects (c) on the child, above and beyond their indirect effect via the parents.

past and heal their parents and themselves (Danieli, Norris, Lindert, Paisner, Kronenberg, et al., 2015). We chose the word *impacts* to connote both their plurality and their multigenerational dynamics. We hypothesized (see path *b*) that these experienced impacts follow largely from the (child-reported) parents' heterogeneous *posttrauma adaptational styles* (i.e., survival strategies that have generalized to a way of life, including their parenting style and approach to bringing up their children). In earlier research (Danieli, Norris, Lindert, Paisner, Engdahl, et al., 2015), we identified clear distinctions among victim style (characterized as being stuck in the trauma rupture, emotional volatility, and overprotectiveness), numb style (emotional detachment, conspiracy of silence within the family, and intolerance of weakness) and fighter style (valuing and maintaining Jewish identity and valuing mastery and justice).

In our theoretical model, the intensities of the survivor's victim, numb, and fighter styles are each the additive result of multiple causes, organized here into *family history* and *family milieu* (Figure 1, see paths *a*). Although family history is a broader multigenerational concept, here we focus specifically on (a) parents' age cohort (child or adolescent/adult) during the Holocaust (e.g., Bader et al., 2014; Dwork, 1991; Fridman, Fridman, Bakermans-Kranenburg, Sagi-Schwartz, & van IJzendoorn, 2011; Hogman, 1983; Krell, 1985; Krell & Sherman, 1997; Moskovitz, 1983; Robinson, Rapaport-Bar-Sever, & Rapaport, 1994; Robinson, Adler, & Metzer, 1995; Valent, 1993; Vegh, 1979); (b) the nature of parents' Holocaust experiences, including internment in ghettos, labor camps, and/or concentration camps, hiding, and/or escaping (e.g., Baron, Eisman, Scuello, Veyzer, & Lieberman, 1996; Eitinger, 1980; Goodman, 1979); and (c) their postwar resettlement experiences, such as a stay in displaced person camps (e.g., Luchterhand, 1980; Peck, 1997). Family milieu included (a) the post-Holocaust social environment: sociocultural setting (living in Israel or in North America, e.g., Danieli, 1988; Kellermann, 2009; Matussek, 1971/1975; Sigal & Weinfeld, 1989; Solomon, 1998) and socioeconomic status (e.g., Eitinger, 1980; Haas, 1995; Helmreich, 1992; Sigal & Weinfeld, 1989; Suedfeld, 2001); (b) family configuration, especially whether one or both parents were survivors (the so-called "double-dose effect," e.g., Kellermann, 2009; Yehuda et al., 2014); (c) social support/belongingness; for example, surviving parents/grandparents and family size (Aviad-Wilchek, Cohenca-Shiby, & Sasson, 2013; Danieli, 1993; Letzter-Pouw & Werner, 2013; Robinson et al., 1995; Wiseman, 2008) and affiliations with survivor and Jewish groups (Rosensaft, 2015; Sigal & Weinfeld, 1989); and (d) continuity, the generational linkages that help survivors and their children maintain identities despite ruptures across multiple spheres and systems (Danieli, 1981, 1985, 1998; Krystal, 1988; Lifton, 1979).

Using causal modeling software designed for correlational data, we tested the hypothesis that the effects of family history and family milieu on offspring would be predominantly *indirect* through their effects on survivor parents. For the indirect-effect hypothesis to be supported, there must be: (a) statistically significant associations (i.e., path coefficients *a*) between the family history/milieu variables and parents' adaptational styles; (b) statistically significant associations (path coefficients *b*) between parents' styles and offspring's reparative adaptational impacts; and (c) no significant associations between family history/milieu and offspring's reparative impacts when parents' styles are controlled. The indirect effect is the product of the two coefficients ($a \times b$) and tested for statistical significance within the modeling software. We first tested whether the effects are solely indirect (the most parsimonious model) and then examined whether the model's fit improved by allowing family history and milieu factors to have direct effects on the child. The alternative direct effects are denoted by the dotted lines in Figure 1 (paths *c*).

In its totality, within the limits imposed by correlational data, our model provides an empirical test of whether survivors' experiences during and life circumstances after the Holocaust have measurable effects on the next generation. The relative and comparative strengths of various pathways should also help identify priorities for prevention and intervention efforts with Holocaust survivors and their children and with survivors and offspring of other massively traumatized populations.

Method

Overview and Participants

Participants were adult children and grandchildren of Holocaust survivors who volunteered to participate in a web survey. Inclusion criteria were that at least one parent or grandparent had lived in or had to leave one of the countries occupied by or under direct influence of the Nazi regime, for any period of time during 1933–1945 (Bogyeski, 2013). This wide definition increased the potential for natural variability in the severity of the ancestors' exposure and the intensity of their adaptational styles.

The survey consisted of three consecutive parts: questions about the child's perceptions of his or her mother and father and upbringing (Part 1, 140 questions total); the child's perceptions of himself or herself (Part 2, 58 questions); and four-generation family history and sociodemographics (Part 3, 72 questions). The first two questions in Part 3 asked whether the respondent was a (a) child and/or (b) grandchild of survivors.

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 1. For studying the effects of Part 3 measures, we excluded grandchildren and limited the analysis to the 422 adult children of survivors who had complete data on Parts 1 and 2 and provided at least partial data on Part 3. Of these offspring, 72% were daughters of survivors (28% sons) and 78% were North American (22% Israeli). Participants averaged 60 years of age ($SD = 8.2$; range 38–84). The majority had graduate degrees (55%) and were currently married/partnered (76%).

The attrition of participants between Part 1 and Part 3 is likely attributable to the overall length of the survey. We examine the effects of attrition in the first section of Results.

Procedures

Through the web, the principal investigator invited Holocaust survivors' children and grandchildren to participate in a study on family adaptation to trauma. Information about the survey was disseminated to/by general Jewish and survivors' and survivors'

offspring organizations and by word of mouth; these organizations had no knowledge about who participated. The web survey was programmed using Gravity Forms (http://www.gravityforms.com). Visitors viewed a welcome page and an informed consent page in English and Hebrew where they affirmed their willingness to participate before viewing the survey instrument. Anonymous data were collected from this convenience sample between June 16, 2012 and December 24, 2012.

Measures

We phrased our questions to capture (a) the diversity and intensities of survivor parents' posttrauma adaptational styles, as seen through their children's eyes, that serve as mechanisms and pathways of transmission; (b) the impacts perceived by the children themselves in a way that is contextually meaningful for them (as opposed to generic symptom measures); and (c) parents' experiences and life circumstances during and after the Holocaust, that is, factors that characterize the family's history and milieu. To provide such a comprehensive approach to assessment was the original goal of the three-part Danieli Inventory of Multigenerational Legacies of Trauma.

Survivor parent posttrauma adaptational styles (Parent measures, Part 1). In Part 1, participants answered questions about the behaviors, attitudes, and emotions of each parent on a 5-point Likert scale: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither way*), 4 (*agree*), 5 (*strongly agree*). Using hierarchical exploratory factor analyses of Part 1 data (conducted for mothers and fathers separately), we derived three posttrauma adaptational style scales. The 30-item Victim Style Scale (α = .92–.93) encompassed three primary concepts from the lower order analysis: Stuck in the Loss and Trauma Rupture, Overprotectiveness, and Emotional Volatility and Control. The 18-item Numb Style Scale (α = .89) encompassed Emotional Barrenness (Isolation, Detachment), Conspiracy of Silence in the Family, and Intolerance of Weakness (including expression of emotions). The 12-item Fighter Style Scale (α = .69–.70) encompassed Valuing Mastery and Justice and Valuing and Maintaining Jewish (Group) Identity. English–Hebrew analyses suggested good-to-excellent congruence in factor structure (φ = .87–.99). To view the items included in each scale and factor, see Danieli, Norris, Lindert, Paisner, Engdahl, et al., 2015.

Child's reparative adaptational impacts (Offspring measures, Part 2). In Part 2, participants answered questions about themselves on the same 5-point Likert scale. Results from the hierarchical factor analysis yielded a single 36-item scale, Reparative Adaptational Impacts, that had excellent internal consistency (α = .91–.92) and congruence between English and Hebrew versions ($\varphi \geq .95$). The final version of the scale encompassed six subscales from the lower order analysis: Insecurity about One's Competence, Reparative Protectiveness, Need for Power or Control, Obsession with the Holocaust, Defensive Psychosocial Constriction, and Immature Dependency. Associations between reparative adaptational impacts and diagnoses of major depressive episode, posttraumatic stress disorder, and generalized anxiety disorder were moderate to strong (*d*s = 0.48–0.89). To view the items included in the final scale and each factor, see Danieli, Norris, Lindert, Paisner, Kronenberg, et al., 2015.

Family history and milieu (Four-generation sociodemographic description, Part 3). Part 3 of the survey consisted of questions organized into Pre-Holocaust Family Measures, During- and Post-Holocaust Family Measures, and Self Measures. Many questions were open-ended and subsequently coded by the principal investigator and two research assistants working independently and together. For the present paper, we selected or created measures from Part 3 to operationalize constructs in the conceptual framework (see Figure 1).

Family history included survivor age cohort, Holocaust trauma, and post-Holocaust resettlement experiences. Survivor age cohort was coded 0 if the mother or father was a child survivor and 1 if she or he was an adolescent or adult survivor. Five Holocaust experiences were examined: hiding, escaping, ghetto, labor camp, and concentration camp. Other measured experiences either overlapped extensively with experiences in this list (death march with concentration camp) or had low frequency (resistance). On the basis of preliminary analyses, we categorized the nature of the Holocaust experience as (a) *hiding only*, (b) *escape with or without hiding*, (c) *internment* (ghetto, labor camp, or concentration camp) *combined with hiding and/or escape,* and (d) *internment without hiding or escape*. Two variables captured post-Holocaust resettlement experiences: (a) whether or not the parent stayed in a displaced person camp; and (b) the number of cities/countries the parent resided in before permanently settling, scored 0, 1, or 2 (2 or more).

Family milieu had four categories of variables representing sociocultural setting and status, family configuration, social support/belongingness, and continuity. Sociocultural setting and status included the place in which they settled (*North America* = 1, *Israel* = 2) and post-Holocaust socioeconomic status (SES), an ordinal variable where 1 = *low social class*, 2 = *lower middle or working class* and 3 = *upper middle or high class*. Respondents evaluated each parent's SES separately, but the two measures correlated .90 and were averaged to create a single measure of family SES.

Family configuration encompassed parents' combined survivor status and parents' marriage date. Categories of combined survivor status were (a) only one parent was a survivor and (b) both parents were survivors. Categories of parents' marriage date were (a) before/during the war, (b) 1945–1948, and (c) 1949 or later.

Social support/belongingness included the survival/post-Holocaust presence of the parent's mother and father, post-Holocaust family size, number of children, and affiliations with survivor groups. Measures of presence/survival of mother and father were scored 1 if the parent's mother/father (respondent's grandmother/grandfather) survived the Holocaust, 0 if perished. Post-Holocaust family size was an ordinal variable for mother and father combined where 0 = *no surviving family*, 1 = *small*, and 2 = *moderate to large*. Number of children was a continuous measure based on the respondent's list of brothers and sisters and half-brothers and sisters. Affiliations were coded (a) affiliation with Holocaust-related groups, (b) formal affiliations with general Jewish groups but no affiliation with Holocaust-related groups, (c) informal affiliations with survivors but no formal affiliations, and (d) no affiliations.

Continuity was reflected in measures of broken generational linkages and intergenerational continuity of religious affiliation/practice. Broken generational linkages was a continuous measure, the average of the respondent's answers to two related questions, each scored on a 5-point Likert scale of agreement, as follows: "I rarely think of my parent's murdered parents as my own grandparents" and "I remember my (grand)parents'/'s Holocaust/genocide/war experiences 'only in bits and pieces.'" Continuity of intergenerational religious affiliation/practice was an ordinal variable where 0 = *no continuity*, 1 = *some continuity*, and 3 = *complete continuity*, meaning the child had the same religious affiliation (affiliated, nonaffiliated) and practice (secular, observant) as did his or her mother, father, mother's parents and father's parents.

Data Analysis

Phase 1. We tested the effects of family history and family milieu on parents' survivor posttrauma adaptational styles and children's reparative adaptational impacts in two phases. First we used hierarchical multiple regression with mothers' and fathers' victim, numb and fighter style scales as the dependent variables.

"Dummy variables" represented categorical (nominal) independent variables with more than two categories. Reference categories were as follows: *Hiding only* for the nature of Holocaust experience; *before/during the war* for parents' marriage date; and *no affiliations* for affiliations with survivor groups.

To keep the sample constant across the six equations, we used a mean substitution rule to replace missing data on particular measures (see Attrition Analyses below). Participant's gender (*female* = 1, *male* = 2) was controlled in all equations. In Equation Set 1 (family history variables), age cohort and Holocaust experiences were entered first followed by post-Holocaust resettlement variables. In Equation Set 2, family milieu variables were entered as follows: sociocultural setting and status, family configuration, social support/belongingness, and continuity. Within a block (e.g., family configuration), we removed variables that showed no association with any of the six dependent variables before entering the next block of variables.

The final Phase 1 analysis was a regression of participants' reparative adaptational impacts on the six parent style scales.

Phase 2. To test the indirect effects of family history and milieu on offspring's reparative adaptational impacts, we conducted path analysis using Mplus, Version 7 (Muthén & Muthén, 1998–2012) and a maximum likelihood solution. Results from Phase 1 guided selection of variables for inclusion in the path model. For indirect effects of X on Y2 through Y1 to be possible, two things must first be true: Y1 must affect Y2 and X must affect Y1. We thus included only those parent style measures (Y1) that were significantly, independently related to the child's reparative impacts (Y2), and we included only those family history/milieu measures (X) that were related to the relevant styles. We first tested the most parsimonious model by specifying that all effects of family history and family milieu variables on the child were indirect through the parents' styles. Model-level fit statistics and variable-level residuals were used to determine if the model needed to be modified and, if so, how.

Although the data were correlational, according to convention, we use the language of multiple regression and path analysis to describe the results. "Effect" (direct, indirect, or total) indicates only that, with other variables controlled, B varies as A varies. Significant effects are necessary but not sufficient for establishing causation.

Results

Descriptive Statistics and Attrition Analysis

Tables 1 (child of survivor and family) and 2 (survivor parents) provide descriptive data on all variables included in the analyses. For ordinal and categorical measures, relative frequencies are shown both with and without missing data. On average, participants scored at the midpoint (3) on our scale of reparative adaptational impacts, but their scores encompassed virtually the entire

Table 1. *Descriptive Statistics for Child of Survivor and Family Measures (n = 422)*

Continuous measures	Family or child		
	n	*M*	*SD*
Reparative adaptational impacts	422	3.00	.66
Number of children including participant	342	2.35	.95
Broken generational linkages	420	2.70	1.21
Ordinal/categorical measures	***n***	**%**	**%**
Control variables (gender)			
Daughter/female	288	68.2	72.5
Son/male	109	25.8	27.5
No data	25	25.0	
Socio-cultural setting			
North America	328	77.7	77.7
Israel	94	22.3	22.3
Post-Holocaust SES			
Low	21	5.2	7.4
Lower middle, working class	222	52.6	75.3
Upper middle, high class	51	12.1	17.3
No data	127	30.1	
Family configuration			
One parent is survivor	61	14.4	15.3
Both parents are survivors	338	80.1	84.7
No data	23	5.5	
Parents' marriage date			
Before or during war	63	14.9	18.8
1945 to 1948	140	33.2	11.6
1949 or later	132	31.3	41.8
No data	87	20.6	39.4
Surviving family size (both parents combined)			
None	20	4.7	6.3
Small	282	66.8	88.7
Moderate–large	16	3.8	5.0
No data	104	24.6	
Continuity in religious affiliation and practice			
No continuity	72	17.1	27.0
Some continuity	67	15.9	25.1
Complete continuity	128	30.3	47.9
No data	155	36.7	

Table 2. *Descriptive Statistics for Parent/Survivor Measures (n = 422)*

	Mother			Father		
Continuous measures	*n*	*M*	*SD*	*n*	*M*	*SD*
Victim style	422	2.85	0.79	422	2.68	0.75
Numb style	422	2.79	0.88	422	2.87	0.87
Fighter style	422	3.58	0.67	422	3.55	0.68
Ordinal/categorical measures	*n*	%	%	*n*	%	%
Age cohort of survivor						
Child	66	15.6	19.9	18	4.3	5.8
Adolescent or adult	265	62.8	80.1	291	69.0	94.2
Not survivor or no data	91	21.6		113	26.8	
Nature of Holocaust experience						
Hiding only	32	7.6	11.1	15	3.6	5.5
Escape with or without hiding	50	11.8	17.4	54	12.8	19.6
Internment with hiding or escaping	69	16.4	24.0	81	19.2	29.5
Internment without hiding or escaping	136	32.2	47.4	125	29.6	45.5
No experience or no data	135	32.0		147	34.8	
Displaced person camp						
No	95	22.5	40.9	101	23.9	45.5
Yes	137	32.5	59.1	121	28.7	54.5
No data	190	45.0		200	47.4	
Number cities/countries on way to resettlement						
0	28	6.6	11.8		6.4	11.6
1	114	27.0	48.1		25.8	46.8
2–5	95	22.5	40.1		23.0	41.6
No data or not applicable	185	56.2			44.8	
Presence/survival of parent's father						
No	218	51.7	74.4	211	50.0	75.6
Yes	75	17.8	25.6	68	16.1	24.4
No data	129	30.6		143	33.9	
Affiliations with survivor groups						
Holocaust-related	57	13.5	19.7	43	10.2	15.4
General Jewish	65	15.4	22.4	69	16.4	24.7
Informal	29	6.9	10.0	23	5.5	8.2
None	139	32.9	47.9	144	34.1	51.6
No data	132	31.3		143	33.9	

range from *essentially unaffected* (1) to *severely affected* (5). Similarly, parents averaged slightly below the midpoints on victim style and numb style, and above the midpoints on fighter style, but showed considerable variability in the intensity of their child-reported adaptational styles.

To examine the effects of attrition, we compared means on the parent style (Part 1) and child reparative impact (Part 2) measures between those who completed at least some portion of Part 3 and those who did not. There were no differences between groups on any of the mother, father, or child measures: for mother's victim style, $t(729) < 1$; for mother's numb style, $t(718) < 1$; for mother's fighter style, $t(713) < 1$; for father's victim style, $t(749) = 1.15$, *ns*; for father's numb style, $t(704) < 1$; for father's fighter style, $t(695) < 1$; for child's reparative impacts, $t(698) < 1$. Tests of unequal variance were also all nonsignificant: for mother's numb style, $F(1, 718) = 1.78$, $p = .18$; all other Fs < 1. In summary, respondents who did not complete the family history and milieu measures did not differ from those who did provide this information on either the means or variability of any of the dependent measures. The data thus appear to be missing at random, justifying our use of the mean substitution rule.

Phase 1

Predictors of parents' survivor posttrauma adaptational styles. Table 3 provides results for the final regression equations for family history. Mother's age cohort was significantly related to all three style measures: Adult survivor mothers had more intense victim, numb, and fighter styles than did child survivor mothers. Father's age cohort, however, was related only to fighter style, which was higher in adult than child survivors. Independently, the nature of Holocaust experiences correlated with both mothers' and fathers' victim and fighter styles. Mothers who experienced internment without hiding or escaping showed more intense victim styles than other mothers, and mothers who experienced internment with hiding/escaping or internment without hiding/escaping showed more intense fighter styles. Fathers who experienced hiding only (the reference category) showed less intense victim and fighter styles than other fathers. Neither of the post-Holocaust resettlement variables was significant in any equation. The family history equation explained 6% ($p < .001$), 4% ($p < .05$), and 5% ($p < .01$) of the variance in mother's victim,

Table 3. *Effects of Family History on Parents' Posttrauma Adaptational Styles*

	Mother			Father		
	Victim style	Numb style	Fighter style	Victim style	Numb style	Fighter style
Respondent's gender (1 = female, 2 = male)	−.09	−.09	.06	−.09	−.03	.01
Age cohort of survivor (0 = child, 1 = adolescent/adult)	.18***	.11*	.11*	.03	−.06	.11*
Nature of Holocaust experience (reference = hiding only)						
Escape with/without hiding	.09	.07	.13	.18	.01	.21*
Internment with escape/hiding	.11	−.07	.19*	.22*	−.02	.25*
Internment without escape/hiding	.22**	−.05	.25**	.28**	.02	.23*
Post-Holocaust resettlement						
Displaced person camp	−.03	−.01	.06	.07	.01	.07
Number of places before resettled	.00	−.06	−.04	.03	.00	−.01

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

numb, and fighter styles, respectively, and 3% ($p < .05$), 1% (*ns*), and 3% (*ns*) of the variance in father's victim, numb, and fighter styles, respectively.

Table 4 provides results for the final regression equations of child-reported parent styles on family milieu variables. Three variables had no significant effects and were not carried forward: parents' marriage date (in family configuration set) and presence/survival of father's mother and father's father (in social support/belongingness set). Regarding the sociocultural setting and status variables, mothers and fathers who settled in Israel showed less intense victim and fighter styles than those who settled in North America. Higher family SES was associated with less intense victim styles in mothers. Combined survivor status (family configuration) was related to fighter style: Mothers and fathers in two-survivor couples had higher intensities of fighter style. It was also related to father's numb style: fathers in one-survivor couples had higher numb style intensities.

Among the social support/belongingness variables, the presence/survival of the mother's mother was associated with less intense victim style in the mother and father, and the presence/survival of the mother's father was associated with less intense fighter style in the mother. The greater the number of children, the higher the father's fighter style. Larger post-Holocaust families were associated with less intense victim styles in both mothers and fathers and with less intense numb styles in mothers. Affiliation with Holocaust-related survivor groups was associated with less intense victim style and more intense fighter style in the mother; affiliations with general Jewish groups were associated with higher fighter style in both mother and father; and informal affiliations with survivors were associated with more intense fighter style and less intense numb style in both mother and father.

Regarding the influence of continuity, broken generational linkages were significantly associated with more intense victim and numb styles, whereas greater intergenerational continuity in reli-

Table 4. *Effects of Family Milieu on Parents' Posttrauma Adaptational Styles*

	Mother			Father		
	Victim style	Numb style	Fighter style	Victim style	Numb style	Fighter style
Respondent's gender (1 = female, 2 = male)	−.10*	−.09*	.01	−.10*	−.03	−.03
Sociocultural setting and status						
Setting (North America = 1, Israel = 2)	−.22***	−.05	−.43***	−.22***	−.02	−.37***
Post-Holocaust socioeconomic status	−.10*	−.08	.00	−.08	−.09	.07
Family configuration						
Combined survivor status (one parent = 1, both = 2)	.06	−.06	.09*	.03	−.13**	.12**
Social support/belongingness						
Presence/survival of mother's mother	−.14**	−.06	−.05	−.12*	−.03	−.08
Presence/survival of mother's father	−.03	.03	−.10*	.01	.04	−.07
Number of children	−.07	.06	.05	−.02	.04	.09*
Post-Holocaust family size (combined)	−.11*	−.11*	−.02	−.12*	−.08	.00
Affiliation with survivors (reference = no affiliation)						
Holocaust-related survivor group affiliations	−.10*	−.02	.12*	−.02	.01	.04
Other formal, general Jewish affiliation	.01	−.09	.19***	−.03	−.09	.13**
Informal affiliations	.02	−.11*	.13**	−.03	−.13**	.11*
Continuity						
Broken generational linkages	.17***	.25***	−.05	.16***	.25***	−.05
Continuity in religious affiliation/practice	−.12**	.01	.03	−.10*	.01	.00

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

gious affiliation/practice was associated with less intense victim styles in both mothers and fathers. The final family milieu equation explained 16% ($p < .001$), 11% ($p < .001$), and 25% ($p < .001$) of the variance in mother's victim, numb, and fighter styles, respectively, and 12% ($p < .001$), 11% ($p < .001$), and 19% ($p < .001$) of the variance in father's victim, numb, and fighter styles, respectively.

Child's reparative adaptational impacts. When the adult child's reparative impacts were regressed on the family history and milieu (independent) variables, without taking parents' adaptational styles into account, there were no (direct) effects of Holocaust experiences, $R^2\Delta = .026$, *ns*, sociocultural setting and status, $R^2\Delta = .009$, *ns*, or family configuration, $R^2\Delta = .003$, *ns*, but there were effects of social support/belongingness, $R^2\Delta = .054$, $p < .05$, and continuity, $R^2\Delta = .055$, $p < .001$. Significant effects were associated with presence/survival of mother's mother, $\beta = -.13$, $p < .05$, surviving family size, $\beta = -.13$, $p < .01$, broken generational linkages, $\beta = .22$, $p < .001$, and continuity in religious affiliation and practice, $\beta = -.10$, $p < .05$.

In the final analysis of Phase 1, reparative adaptational impacts were regressed on the six child-reported parent style measures. Daughters reported higher reparative adaptational impacts than did sons, $\beta = -.08$, $p < .05$. Mothers' and fathers' victim styles had the strongest effects on the participants' reparative impacts, βs = .31, .33, $p < .001$. Mothers' numb style exerted an additional, independent effect, $\beta = .15$, $p < .05$, while fathers' numb style did not, $\beta = .04$, *ns*. Neither mothers' nor fathers' fighter style had effects, βs = .10, −.07, *ns.* The equation explained 52% ($p < .001$) of the variance in the offspring's reparative impacts.

Phase 2

Model specification and preliminary analyses. The above results guided decisions about variables to include in the path model. The dependent variables were the participant's reparative adaptational impacts, mother's victim style, and father's victim style. Numb and fighter styles were not included in the model because of their negligible (fighter) or uneven (numb) effects on the child. The following independent variables were included because they showed effects on victim style scores of mothers or fathers or both in Phase 1: mother's age cohort, nature of mother's Holocaust experience, nature of father's Holocaust experience, sociocultural setting, post-Holocaust family SES, presence/survival of mother's mother, post-Holocaust family size, mother's affiliation with Holocaust survivor groups, broken generational linkages, and continuity in religious affiliation/practice.

Other than between dummy variables in the same set (that are correlated by definition), correlations among the selected predictors were modest, with the strongest, in order, being between (a) mother's age cohort and survival/presence of mother's mother, $r = -.30$, $p < .01$; (b) mother's age cohort and affiliation with Holocaust survivor groups, $r = .18$, $p < .01$; and (c) the survival/presence of the mother's mother and mother's internment without hiding or escape, $r = -.18$, $p < .001$.

The free paths in the model were those from gender (the control variable), mothers' victim style and fathers' victim style to offspring's reparative adaptational impacts and those from the independent variables to mother's and/or father's victim styles. Mothers' and fathers' victim styles were free to correlate, as were the independent variables. All paths from the independent variables (other than gender) to reparative adaptational impacts were constrained to 0.

Model fit. This model provided an adequate fit to the data, $\chi^2(22) = 31.30$, $p = .09$, RMSEA = 0.032, CFI = 0.988, but there was a significant residual (unexplained correlation in the observed data) between reparative impacts and broken generational linkages ($z = 2.43$). We thus relaxed this constraint in the original model, allowing broken generational linkages to have a direct effect on reparative impacts. This model provided a better fit, $\chi^2(21) = 25.01$, $p = .247$, RMSEA = 0.021, CFI = 0.995. In this revised model, there were no residuals with *z*-scores >1.96 or < −1.96. It explained 15% of the variance in mother's victim style, 13% of the variance in father's victim style, and 51% of the variance in the child's reparative adaptational impacts.

Direct, indirect and total effects. All direct effects, indirect effects, and total effects from the revised model are shown in Table 5. As shown earlier, the intensities of mother's and father's victim styles had significant and substantial effects on the participant's reparative adaptational impacts. The nature of the mother's Holocaust experience and the nature of the father's Holocaust experience each, independently, had significant indirect and total effects on the participant. Parents' internment without escape/hiding was most strongly and consistently associated with higher reparative impacts.

Most features of the family milieu had effects on adult children of survivors. Living in Israel (rather than North America), higher post-Holocaust family SES, presence/survival of mother's mother, larger post-Holocaust family size and greater continuity of religious affiliation and practice all had significant indirect and total effects, lessening offspring's reparative impacts. Conversely, broken generational linkages had detrimental direct effects as well as detrimental indirect effects that yielded the strongest total effect of any independent variable.

Discussion

This study demonstrated empirically that survivors' experiences during and life circumstances after the Holocaust do indeed affect their children—a crucial question that has plagued the field for five decades—and do so primarily through parents' posttrauma adaptational styles. Mothers' and fathers' adaptational styles affected their offspring independently, allowing us to elaborate on the "double dose effect" (whether reparative adaptational impacts on the child are greater when both parents are survivors). Heeding Kellermann's (2009) call for future research on this phenomenon, Letzter-Pouw, Shrira, Ben-Ezra, and Palgi (2014) found higher Holocaust-related posttraumatic stress symptoms among offspring of two survivor parents than among offspring of one survivor parent married to a nonsurvivor. They also found that the number of posttraumatic symptoms increased with the child's perception of "transmission of burden" from each parent (mother or father, analyzed separately). In contrast, in our study parents' combined survivor status had neither direct nor indirect effects on offspring, but mothers' and fathers' victim styles (analyzed together) had

Table 5. *Standardized Coefficients From Final Path Model Predicting Child of Survivors' Reparative Adaptational Impacts*

	Mother's victim style	Father's victim style	Child's reparative adaptational impacts		
	Direct effects	Direct effects	Direct effects	Indirect effects	Total effects
Control variables					
Child's gender	−.09	−.09	−.08*		−.08*
Parents' intensity of victim style					
Mother			.38***		.38***
Father			.34***		.34***
Family history					
Mother is adult survivor	.00			.00	.00
Mother's Holocaust experience					
Escape with/without hiding	.10*			.04*	.04*
Internment with escape/hiding	.06			.02	.02
Internment without escape/hiding	.13*			.05*	.05*
Father's Holocaust experience					
Escape with/without hiding		.10		.04	.04
Internment with escape/hiding		.14*		.05*	.05*
Internment without escape/hiding		.18**		.06*	.06*
Family milieu					
Milieu (North America = 1, Israel = 2)	−.21***	−.23***		−.16***	−.16***
Post-Holocaust SES	−.11*	−.08		−.07*	−.07*
Presence/survival of mother's mother	−.16**	−.14**		−.11**	−.11**
Post-Holocaust family size (combined)	−.10*	−.09*		−.07*	−.07*
Mother's Holocaust survivor group affiliation	−.04			−.02	−.02
Broken generational linkages	.18***	.15***	.09**	.12***	.21***
Continuity in religious affiliation/practice	−.11*	−.09*		−.07*	−.07*

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

independent, additive effects. Thus, while consistent with the double dose effect, our findings nonetheless suggest that it should be reconceptualized as the result of psychosocial processes rather than of survivor status per se. Regardless of whether the marriage was between two survivors or between a survivor and a nonsurvivor, what mattered was the offspring-reported intensities of their mother's and father's victim styles.

The low percentage of fathers in our sample who were child survivors (see Table 2) did not allow us to provide conclusive results regarding the effects of age cohort, a subject of great interest in recent decades. However, mother's age cohort was related to all three style measures, with adult survivor mothers having more intense victim, numb and fighter styles. These effects dropped out when correlates such as presence/survival of the mother's mother were controlled. Thus the advantage of child survivors appears to be explained by contextual features of the family milieu.

Of the family history measures, internment was most strongly related to the intensities of the survivor parents' victim styles and, as a result, had the strongest indirect effect on their offspring. Yet the effects of post-Holocaust family milieu were stronger than those of family history. To characterize the social environment of the family, we included components of sociocultural setting and status, family configuration, social support/belongingness, and continuity. Each component of family milieu had one or more effects on mothers' and fathers' victim, numb and/or fighter styles. The final family milieu equation explained the most variance in fighter style (25% mother, 19% father), followed by victim style (16% mother, 12% father) and numb style (11% mother, 11% father). Taken as a whole, these findings suggest a multiplicity of influences on and of survivor parents. To understand children of survivors, we need to know far more about their family life than their parents' survivor status, age cohort, and Holocaust (trauma) experiences. In line with the TCMI framework, our study strongly supports a multidimensional approach to assess an individual's posttraumatic status.

Two of the various family milieu relationships stood out. The first was that living in Israel appeared to be reparative. While both Israel and North America offered a new future for survivors, particularly as compared with staying in Germany ("the country of their persecutors," Matussek, 1971/1975, p. 137), and despite Holocaust-related (Danieli, 1982; Segev, 1991) and other ongoing hardships, Israel was uniquely endowed to mitigate many of the long-term effects of Holocaust trauma (Dasberg, 1987; Eitinger, 1980; Klein, 1973; Last & Klein, 1984; Solomon, 1998; see also, Kleinplatz, 1980 for comparisons between North American and Israeli children of survivors). As Solomon (1998) observed, in Israel, the Holocaust was the "legacy of all," and Israeli survivors found meaning in (re)creating and maintaining the ancient/new Jewish state and actively defending her survival.

The second key finding was the apparent protective effects of continuity, a conception of life that spans past, present and future. In our study, both measures of continuity (broken generational linkages and continuity in religious affiliation/practice across gen-

erations) had indirect effects: the greater the continuity, the lower the parents' intensities of victim style and, in turn, the lower the child's reparative adaptational impacts. Broken generational linkages had, in addition, a direct effect, yielding the largest total effect of any independent variable. Moreover, certain circumstances signifying social support/belongingness, notably, survival/presence of the mother's mother and larger surviving family, likely enhanced family continuity. Indeed, a greater sense of continuity with Jewish history might be another protective factor afforded by living in Israel (Carmil & Breznitz, 1991).

We are not aware of prior empirical studies that have explicitly measured family continuity and analyzed its effects on survivors and their offspring, but clinical and theoretical writers have long emphasized its importance in both traumatized families (e.g., Danieli, 1985, 1989, 1998) and families in general (e.g., Bowen, 1978; McGoldrick, Pearce, & Giordano, 1982). Perhaps more than any other concept we studied, broken generational linkages captures the rupture and tragedy inherent to the Holocaust. For Holocaust survivors, Nazi destruction of families and communities was the critical *extrafamilial* experience underlying the development of victim adaptational styles that through subsequent *intrafamilial* dynamics adversely affected their children. Further, broken generational linkages became the offspring's *intrapsychic* representation of the rupture affecting them not only indirectly via intrafamilial transmission processes (e.g., Bowen, 1978) but also directly as the internalized Holocaust rupture. Indeed, children of such families, while remembering their parents' and lost families' war histories "only in bits and pieces," attested to the constant psychological presence of the Holocaust at home, in some cases, reporting having absorbed the omnipresent experience of the Holocaust through "osmosis." Though born after such massive trauma in societies gripped by the conspiracy of silence, they were nonetheless expected to reroot a family tree steeped in murder, death, and losses and start anew a healthy generational cycle while rarely thinking of their parent's murdered parents as their own grandparents.

Some family milieu variables/effects can be construed in more ways than one. The size of parents' surviving family may have represented the antithesis of loss. Some survivor mothers and fathers literally had no surviving family members. Thus our finding that larger family size was associated with a less intense victim style in parents and, accordingly, less severe adaptational impacts in offspring, may mean that massive loss/bereavement exacerbated the inter/generational impact of the Holocaust (Bar-On, 1996; Danieli, 1989; Letzter-Pouw & Werner, 2013).

Limitations to the study include our reliance on correlational data, captured at a single point in time, long after the Holocaust. Following convention, we used the succinct language of path analysis in labeling associations as direct, indirect, and total effects but, of course, such statistical effects are necessary but not sufficient for establishing causation. Other limitations include use of convenience sampling, a recruitment approach that might over- or underrepresent certain segments of the survivors' offspring population, absence of a control group of nonsurvivor families, and reliance on retrospective perceptions of respondents. While Yehuda et al. (2006) showed that adult children of survivors can be reliable informers about their parent's posttraumatic stress disorder (PTSD), the more significant issue is that children's perspectives on their parents and upbringing may be tempered by time and experience (e.g., Danieli, 1998; Keller, 1988; Scharf, 2007; Schwartz et al., 1994). Children's success in life—or lack thereof—may color views of their upbringing, potentially inflating the relationship between parent and child measures.

A more serious methodological issue for the present article may have been attrition between Parts 1 and 3 of the survey. The questionnaire was long, and almost a third of those who completed Part 1 did not complete all three parts. We cannot rule out the possibility that complex patterns of nonresponse created biases in our results, as might happen, for example, if children of concentration camp survivors with high victim style answered Part 3, while children of concentration camp survivors with low victim style did not. However, we do know that Part 3 completers did not differ from Part 3 noncompleters on any of the seven parent and child dependent measures. Part 3 completers and noncompleters also showed equal variability on these measures. The primary consequence of attrition may well have been loss of study power, meaning we would not detect small but nevertheless important effects because of the smaller sample size. To the best of our knowledge, however, even our reduced sample ($n = 422$) is the largest single sample of children of Holocaust survivors to date.

Notwithstanding its limitations, our study was the first to attempt to operationalize the comprehensive, complex TCMI framework by simultaneously examining effects of family history, including Holocaust trauma, and post-Holocaust family milieu on both parents and offspring in a multivariate model. The approach allowed for an overall test of the model, as well as for tests of specific direct, indirect, and total effects. Although the two-phased analysis strategy and the multidimensional nature of the parent measures yielded many nonsignificant tests, the patterns of significance and nonsignificance proved instructive for understanding multigenerational legacies of trauma and for establishing priorities for intervention.

Much work remains to more fully understand multigenerational legacies of trauma. Some child characteristics potentially moderate effects observed here. Daughters and sons, for example, may be differentially influenced by mothers' and fathers' styles, yielding gender-specific patterns or strengths of indirect effects. Future research should test whether our findings generalize to grandchildren of Holocaust survivors and/or to offspring of survivors of other massive trauma, such as genocide, crimes against humanity, and war crimes, across cultures and in differing age cohorts of offspring. Intergenerational effects could be further clarified by studying the psychosocial measures we have examined (family history/milieu, parent adaptational styles, and child reparative impacts) together with genetic data. Knowing the genotype and the endophenotype (e.g., DNA methylation status), one would expect systematic relationships among these variables and phenotypes identified by the Danieli Inventory.

Our findings have implications for clinical and community interventions. The healing processes that underlie the observed effects of family milieu are malleable by helping survivors recapture meaning, purpose, identity, connectedness of past, present, and future, and attachments to community and place. Faith-based institutions, teachers, community leaders, clinicians, policymakers, the media and funders must augment the efforts of family and friends to promote the well-being of the staggering number of victim/survivors and (potential) offspring worldwide, thereby preventing destructive legacies and protecting future generations.

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

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