

SELF-STRUCTURE AND CHILDHOOD MALTREATMENT: SUCCESSFUL COMPARTMENTALIZATION AND THE STRUGGLE OF INTEGRATION

CAROLIN J. SHOWERS, VIRGIL ZEIGLER-HILL, AND ALICIA LIMKE
University of Oklahoma

This study examined the self-structure (compartmentalization, self-complexity, and differential importance) of college students who reported maltreatment events before age 15. The focus was on emotional and sexual maltreatment, although physical maltreatment was taken into account. Only individuals who reported high sexual *and* high emotional events displayed the integrative self-structures expected of individuals with chronically salient negative self-aspects. Individuals who reported only sexual maltreatment had more compartmentalized self-structures than individuals with low (or no) maltreatment events. Follow-up analyses suggested that within maltreated individuals, compartmentalized self-structures were associated with lower levels of distress and defenses than were integrative self-structures, especially among those who reported only sexual events. The relatively poor adjustment of individuals with integrative self-structures is interpreted here as a sign of ongoing struggle with the negative self-beliefs that accompany maltreatment.

Recent approaches to the self-concept have emphasized both the content of self-knowledge and its organizational structure (Kihlstrom, Beer, & Klein, 2003; Showers & Zeigler-Hill, 2003). Structural models typically identify processes that moderate the impact of specific

The order of the first two authors is alphabetical.

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Virgil Zeigler-Hill is now at the University of Southern Mississippi, and Alicia Limke is now at Oklahoma State Department of Education.

Please address correspondence to: Carolin Showers, Department of Psychology, University of Oklahoma, Norman, OK 73019. E-mail: cshowers@ou.edu.

self-knowledge and beliefs, whether this information is benign or threatening (Campbell, 1990; Higgins, Bond, Klein, & Strauman, 1986; Linville, 1987; Pelham & Swann, 1989). A particularly interesting application of this work is to individuals who are likely to have extremely negative self-concepts, such as depressed persons (e.g., Pelham, 1991; Strauman, 1989; Woolfolk et al., 1999), individuals with a history of traumatic experience (Morgan & Janoff-Bulman, 1994), or individuals with bipolar disorder (Power, de Jong, & Lloyd, 2002). The present study extends previous work concerning organizational features of the self to a group of individuals who are likely to have extremely negative self-concepts, namely individuals who have experienced childhood maltreatment. We examine three features of self-structure—compartmentalization, self-complexity, and differential importance—in college students who report sexual and/or emotional maltreatment events occurring before age 15, and test the association between self-structure and psychological adjustment in these individuals.

SELF-CONCEPT CONTENT AND STRUCTURE

An interest in structural features of the self emerges from a view of the self-concept as a multifaceted construct (e.g., Kihlstrom & Cantor, 1984; Linville, 1987; Markus & Wurf, 1987). A multifaceted self likely contains a broad array of sometimes conflicting attributes, organized into a set of multiple *self-aspect categories*. Each self-aspect may represent a state, trait, domain, or social role, and contains a set of specific attributes or beliefs. This organizational structure should influence the accessibility of specific self-beliefs. The present research focuses on these self-aspect categories, and how they may affect the impact of negative self-beliefs. The structural features examined in the present research are evaluative organization (Showers, 1992a, 2000), differential importance (Pelham, 1991; Pelham & Swann, 1989), and self-complexity (Linville, 1985, 1987).

The model of *evaluative organization* identifies two forms of self-organization—compartmentalization and integration—which differ in the distribution of positive and negative self-beliefs across a person's self-aspects. Compartmentalization refers to the tendency to organize one's self-aspects so that the information associated with any given self-aspect is primarily positive or primarily negative (Showers, 1992b, 1995; Showers & Kling, 1996a, 1996b). For example, a compartmentalized college student may have one self-aspect that represents the "Renaissance Scholar" self (i.e., experiences the self as curious, motivated, and creative). This same student may have another self-aspect, which is

the “Me During Finals Week,” who is tense, distracted, and insecure. In contrast, a college student with an integrative self-structure may have self-aspects that tend to contain a mixture of positive and negative attributes (e.g., the “Me in Science Classes” who is disciplined and analytical but also competitive and tense).

The basic model of evaluative organization predicts that when positive self-aspects and attributes are salient, compartmentalization will be associated with more positive mood and higher self-esteem than will evaluative integration. This is because compartmentalization should limit access to negative self-beliefs by relegating them to self-aspects that are rarely activated. A compartmentalized structure for which purely positive self-aspects are most important is referred to as being positive-compartmentalized. However, when compartmentalized negative self-aspects are most important or most salient, a structure may be negative-compartmentalized. In this case, the frequent activation of purely negative compartments would tend to activate many negative self-beliefs, with strong negative consequences for mood and self-esteem. Thus, individuals who have many important, salient negative attributes may benefit from an integrative structure, which tends to link positive and negative attributes, ensuring that some positive attributes typically come to mind. In other words, the basic model predicts that when the self-concept is primarily positive or positive self-aspects are salient, compartmentalization is associated with good psychological adjustment (e.g., high self-esteem and positive mood). However, integration is associated with higher levels of psychological adjustment when the self-concept is primarily negative or negative self-aspects are salient. These predictions have been supported by empirical studies that correlate the individual’s self-structure with current mood or self-esteem (e.g., Rhodewalt, Madrian, & Cheney, 1998; Showers, 1992a; Showers & Kling, 1996a).

Recent research, however, suggests a slightly different perspective on the long-term consequences of integrative thinking for individuals with strong negative beliefs. Although integrative thinking may help to maintain positive feelings about the self in the short term, the effort and resources that integration requires may make it difficult to sustain this self-structure over the long term (McMahon, Showers, Rieder, Abramson, & Hogan, 2003; Showers & Zeigler-Hill, 2004). Moreover, although integration should be preferable to compartmentalization when negative attributes are salient, integration should still be associated with more negative feelings than successful positive compartmentalization (in which negative attributes are adroitly ignored). Hence, integration may often be a short-term strategy that requires high effort and cognitive resources and is used when a person is actively struggling with neg-

ative attributes (Showers, 2002). Ironically, previous attempts to examine the self-structure of individuals under stress have found increased compartmentalization, possibly due to the propensity of college students to compartmentalize the stresses associated with final exams (Showers, Abramson, & Hogan, 1998). The present study focuses on the possibility that integration may be more likely to persist in individuals who have had extremely negative life experiences that are chronically salient, have a strong impact on the self, and cannot easily be compartmentalized.

The second structural feature examined here is *differential importance*. Differential importance is high when an individual's perceived importance of his or her relatively positive self-aspects is greater than the perceived importance of relatively negative self-aspects (Pelham & Swann, 1989). It may be possible for individuals who possess strong negative self-beliefs to limit their impact by ascribing these beliefs to self-aspects that are low in importance. Thus, differential importance may either reflect negative experience (if those experiences make negative self-beliefs seem more important, leading to a low differential importance score), or it may be a structural feature of the self that is used to cope with negative experience (by relegating relevant negative attributes to aspects that are low in importance, resulting in a high differential importance score).

Self-complexity refers to the extent to which an individual has many distinct and well-elaborated self-aspects. Self-complexity is typically assessed by a card-sorting task in which individuals are asked to identify their multiple self-aspects (e.g., roles, states, or traits) and assign self-descriptive attributes to each one (e.g., Linville, 1985, 1987). High self-complexity entails having many self-aspects that do not have overlapping attributes. According to Linville's model, high self-complexity buffers individuals from stressful experiences by minimizing the amount of self implicated by negative events. A complex self should prevent the impact of a negative event in one self-aspect from "spilling over" into other self-aspects. However, under conditions of low stress, high self-complexity may limit the spillover of positive events, thereby curtailing a positive emotional response. It has also been suggested that individuals may actually develop high self-complexity as a means of coping with traumatic events (Morgan & Janoff-Bulman, 1994; cf. also Steinberg, Pineles, Gardner, & Mineka, 2003).

These three structural attributes are interrelated, both conceptually and methodologically. They can all be assessed by means of a self-descriptive card-sorting task (e.g., Linville, 1985, 1987; Showers & Kling, 1996a). More importantly, they all correspond to strategies for minimizing the impact of negative events or experience and, as such, they have some conceptual overlap. Although the measure of self-complexity

does not explicitly take the positive or negative valence of self-attributes into account, people who are evaluatively integrative tend to have higher self-complexity (e.g., $r = -.33$, [Showers et al., 1998]), possibly because they perceive a wider range of attributes as relevant to each self-aspect. Differential importance tends to be positively correlated with compartmentalization of the self (i.e., most compartmentalized structures are in fact positive compartmentalized; Showers et al., 1998; Showers & Kling, 1996a), and the association between differential importance and mood and self-esteem is more pronounced when the self is relatively compartmentalized (Showers, 1992a; Showers & Kling, 1996a).

The purpose of the present study is to examine these three features of self-structure in individuals who are likely to have extremely negative self-concepts and extremely negative life experiences that would represent a challenge to conventional forms of coping (i.e., those that enhance the self simply by increasing positive self-beliefs). Individuals who have experienced childhood maltreatment may have negative beliefs and experiences that are difficult to deny or avoid, and they may therefore be especially likely to rely on these structural features to provide a means of coping with a negative self.

CHILDHOOD MALTREATMENT

Although emotional, physical, and sexual maltreatment often occur together (Bifulco, Moran, Baines, Bunn, & Stanford, 2002; Briere & Runtz, 1988; Moeller, Bachmann, & Moeller, 1993; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Ney, Fung, & Wickett, 1994), many studies do not measure all three forms of maltreatment. Maltreatment is commonly assessed by subjective global ratings or self-reports of specific events or experiences, or by following substantiated cases of maltreatment in community samples (Briere, 1992). Although emotional maltreatment has received less attention than childhood physical or sexual maltreatment, when multiple forms of maltreatment are assessed, emotional maltreatment has been found to be the strongest predictor of poor psychological adjustment in college students and community adults (Claussen & Crittenden, 1991; Gibb, Alloy, Abramson, & Marx, 2003; Gibb, Alloy, Abramson, Rose, Whitehouse, Donovan et al., 2001; Gibb, Alloy, Abramson, Rose, Whitehouse, & Hogan, 2001; McGee, Wolfe, & Wilson, 1997). The difficulties in adjustment reported by adults with a self-reported history of childhood emotional maltreatment include low self-esteem (Briere & Runtz, 1990; Gross & Keller, 1992; Mullen et al., 1996), depression (Bifulco et al., 2002; Gibb, Alloy, et al., 2001; 2001; Rich,

Gingerich, & Rosen, 1997), and a variety of personality disorders (Gibb, Wheeler, Alloy, & Abramson, 2001).

Rose and Abramson (1992) suggest that emotional maltreatment may differ from physical or sexual maltreatment in that emotionally maltreated children receive explicit negative self-statements from the perpetrator (e.g., "You are stupid and worthless"). These self-statements are likely to be incorporated into the child's self-concept because the statements are unambiguous and because the perpetrator is often a caregiver or other significant individual in the child's life (Glaser, 2002). These extreme negative self-beliefs could potentially have a dramatic impact on the self-concept and psychological adjustment of emotionally maltreated individuals. However, models of self-structure suggest that it may be possible to limit the impact of these beliefs by the organization of self-knowledge, even if their negative content is difficult to deny.

Individuals who report sexual maltreatment have many of the same adjustment difficulties associated with emotional maltreatment, such as depression (Beitchman et al., 1991; Braver, Bumberry, Green, & Rawson, 1992; Dubowitz, Black, Harrington, & Verschoore, 1993) and low self-esteem (Bolger, Patterson, & Kupersmidt, 1998; Grayston, de Luca, & Boyes, 1992). In addition, elevated levels of borderline personality features, immature defense styles, and emotion-focused coping have been reported for sexually maltreated samples (Briere, 1988; Brown & Anderson, 1991; Ganzarain, 1992; Landecker, 1992; Long & Jackson, 1993; Ogata et al., 1990; Romans, Martin, Morris, & Herbison, 1999; Sigmon, Greene, Rohan, & Nichols, 1996). In a different vein, recent work suggests that adjustment problems associated with sexual maltreatment may potentially be explained by the demographic features of these samples, especially the feature of household structure (i.e., the absence of one or more biological parents; Rind, Tromovitch, & Bauserman, 1998). In addition, whereas both emotional and sexual maltreatment are often perpetrated by caregivers or other relatives (e.g., Glaser, 2002), the consequences of sexual maltreatment are especially likely to be dependent on the relationship with the perpetrator (Cole & Putnam, 1992; Faust, Runyon, & Kenny, 1995).

OVERVIEW AND PREDICTIONS

The present study had two primary goals. The first goal was to examine three features of self-structure—compartmentalization, differential importance, and self-complexity—in college students who reported childhood maltreatment and a low (or no) maltreatment comparison group. Because of the substantial correlation between emotional and physical

maltreatment ($r_s > .51$; Gibb, Alloy, & Abramson, 2003; Gibb, Alloy, Abramson, & Marx, 2003), the present study focused on sexual and emotional maltreatment, although physical maltreatment was assessed and taken into account. The prediction was that individuals with extreme maltreatment would possess relatively integrative self-structures. The rationale for this prediction is that extreme maltreatment would be chronically salient and difficult to compartmentalize. A second prediction is that more moderate instances of maltreatment would indeed be compartmentalized, consistent with previous research suggesting that compartmentalization is a positive coping response to less extreme stress (Showers et al., 1998). Differential importance most likely would be relatively low in persons reporting childhood maltreatment, whereas self-complexity might be relatively high, consistent with the notion that coping with stress creates a more complex view of the self.

The second goal of the study was to examine whether these features of self-structure moderated the association between maltreatment and psychological adjustment. As described above, these features may correspond to coping strategies or styles that are linked to adjustment. Previous literature suggests that long-term integrative structures may be associated with residual negative affect or distress and may reflect an ongoing struggle with negative self-beliefs. Compartmentalized structures may correspond to more moderate levels of maltreatment, but may also minimize any residual negative affect or distress. Those individuals who maintain high differential importance despite maltreatment should show relatively good adjustment. High self-complexity often shows baseline correlations with negative mood in unscreened populations, but should be associated with relatively good adjustment if a sample is experiencing high stress.

This study also addresses some frequently cited methodological issues in the child maltreatment literature concerning the lack of appropriate comparison groups, failure to control for other types of maltreatment, and inconsistent use of standardized measures of psychological adjustment (Briere & Runtz, 1988). First, many studies of childhood maltreatment simply compare maltreated individuals (e.g., college students or community samples) to nonmaltreated controls, without considering the possible role of demographic differences between maltreated and nonmaltreated groups (cf. Mullen et al., 1996; Rind et al., 1998). Because of the association between demographic factors and childhood maltreatment (Benedict & Zautra, 1993; Farinatti, Fonseca, & Dondonis, 1990; Mennen, 1995; Roosa, Reinholtz, & Angelini, 1999; Shah, Dail, & Heinrichs, 1995; U.S. Department of Health and Human Services, 2002), the comparison group that we identified for purposes of recruitment

was matched to our eligible maltreated group on demographic variables (gender, age, race/ethnicity, household structure, and parental education).

A second issue in the maltreatment literature is that forms of maltreatment not of direct interest are rarely assessed (Briere, 1992; Gibb, Alloy et al., 2001). The present study focused on emotional and sexual maltreatment, but physical maltreatment was also assessed. A final issue within the maltreatment literature is the lack of consistency in the use of standardized measures of psychological adjustment. To address this concern, measures of psychological adjustment were employed that are commonly used in the literature and are sensitive to both degree of positive adjustment and degree of negative adjustment.

METHOD

SCREENING SESSIONS

Procedure

Over three semesters, 1,457 Introductory Psychology students completed 90-minute screening sessions averaging 100 students per session. The questionnaires included demographic items, a self-report measure of childhood emotional and sexual maltreatment, as well as a variety of measures for other investigators. Both emotionally and sexually maltreated participants (and low-maltreatment controls) were recruited in the first two semesters of screening. Only sexually maltreated participants (and controls) were recruited in the third semester.

Emotionally Maltreated Eligibles

Screening participants completed a modified version of the Life Experiences Questionnaire (LEQ; Rose, Abramson, & Kaupie, 2000; Gibb, Alloy et al., 2001). The LEQ contains 31 emotional maltreatment items representing a broad range of specific events including humiliation, derogation, rejection, extortion, and teasing (e.g., "Did any of your caretakers ever say they wished they were not your parents or that you had never been born?" and "Did you ever ask any of your caretakers for attention, affection, or help with a problem, only to have them ignore you, push you aside, or avoid you?"). Consistent with other studies using the LEQ (e.g., Gibb, Wheeler et al., 2001), we focused on maltreatment events occurring before age 15. Therefore, the modified LEQ questionnaire included the words "Before age 15" at the beginning of each item. Level of maltreatment was determined by summing the number of emotional maltreatment items endorsed by the respondent ($\alpha = .88$). Endorsement of these items ranged from zero (15% of the screening

sample) to 30 (less than 1% of the screening sample), $M = 5.50$, $SD = 5.25$. After individuals with one or more sexual event had been identified (see below), individuals in the highest quintile of emotional events (9 events or more; 173 [93 females, 80 males] of 990 individuals screened during the first two semesters) were recruited for the study.¹

Sexually Maltreated Eligibles

The measure of childhood sexual maltreatment was 17 items adapted from the LEQ (Rose et al., 2000; Gibb, Alloy, Abramson, Rose, Whitehouse, Donovan, et al., 2001a), specifically pertaining to events occurring before age 15 and focusing on perpetrators who were at least five years older ($\alpha = .84$). Events represented a range of sexual maltreatment experiences (e.g., "Before age 15, did anyone ever use physical force to get you to have sex?" or "Before age 15, did you ever observe adults in your family engaging in sexual activities even though they knew you could see what they were doing?"). Endorsement of sexual maltreatment items ranged from zero (86% of the screening sample) to 14 (less than 1% of the screening sample), $M = 0.41$, $SD = 1.38$. Individuals who endorsed one or more sexual events (203 individuals [155 females, 48 males] out of 1,457 individuals screened) were recruited for the study, regardless of the number of emotional events they reported.

Low Maltreatment Eligibles

Individuals with low (or no) maltreatment events were recruited to form a comparison group. The criteria for this group were set to identify approximately half the screening population (so as not to focus on an extreme group). Those criteria were 0 to 4 emotional events and 0 sexual events (49% of the 1,457 individuals screened). From this group, a subset of 415 individuals (a number comparable to the number of emotionally and sexually maltreated eligibles) was identified who had demographic characteristics that were similar to the overall demographic characteristics of the maltreated participants. This means that individuals who were from a racial or ethnic minority, had low parental education, and whose household structure was not two biological parents were especially likely to be recruited for the low-maltreatment group.

Demographic Variables

The demographic items on the screening questionnaire assessed gender,

1. Because we hypothesized that individuals with the most extreme maltreatment would be most likely to maintain an integrative self-structure, we focused on recruiting the most extremely maltreated individuals. In retrospect, we do not recommend this approach. The quintile cutoff for emotional events was selected to match approximately the proportion of individuals who had experienced any sexual maltreatment events.

TABLE 1. Demographic Characteristics of Screening Sample, Invited Participants, and Final Participants

	Screening Sample (<i>N</i> = 1,457)	Recruitment Sample (<i>N</i> = 791)	Final Participants (<i>N</i> = 331)
Gender			
Female	63%	65%	67%
Race/ethnicity			
White, non-Hispanic	83%	80%	82%
Household structure			
Both biological parents	77%	72%	70%
Single parent	10%	12%	15%
Other household structure	13%	16%	15%
Mother's education	2.40	2.39	2.46
Father's education	2.59	2.52	2.62
Average age	19.9	19.9	19.8

Note. Parental education was coded into four categories: 1 = high school degree or less; 2 = some college; 3 = 4-year college degree; and 4 = graduate school or professional degree.

race/ethnicity, age, household structure, and parental education. Household structure for each screening participant was categorized as either two biological or adoptive parents for 13 years or more, single parent only (with no stepparent or other relative present) for three years or more, or other household structure (e.g., one biological parent and one grandparent) for three years or more. For parental education, participants indicated the highest level of education for each biological or adoptive parent, ranging from less than high school to professional degrees. This information was coded into four categories: 1 = high school degree or less, 2 = some college, 3 = four-year college degree, and 4 = graduate school or professional degree. Table 1 presents the demographic characteristics of the entire screening sample ($N = 1457$; column 1) and the recruitment sample ($N = 791$; column 2). Compared to the screening sample, individuals in the recruitment sample were less likely to come from a household with two biological parents, $t(1,455) = 5.40, p < .001$; had fathers with less education, $t(1,455) = 2.74, p < .01$; were less likely to be White (nonHispanic), $t(1,455) = 2.58, p < .01$, and were marginally more likely to be female, $t(1,455) = 1.90, p < .06$.

LABORATORY SESSIONS

Participants

Of 791 individuals invited to participate, 356 individuals actually partic-

ipated in the laboratory sessions. They comprised 95 from the emotionally maltreated eligibles (55%), 85 from the sexually maltreated eligibles (37%), and 176 from the low-maltreatment group (42%).

Self-Concept Measures

Self-Descriptive Card-Sorting Task. The content and structure of the self-concept was measured using Showers's (1992a; Showers & Kling, 1996a) version of the card-sorting task adapted from Linville (1985, 1987). Participants were provided with a deck of 40 cards with each card containing a potentially self-descriptive attribute. There were 20 positive and 20 negative attributes. The positive or negative valence of the attributes has been established by independent raters (Showers, 1992a). Participants were given the following initial instructions, "Your task is to think of the different aspects of yourself or your life and then sort the cards into groups where each group describes an aspect of yourself or your life." Additional instructions and other details of the procedure were very similar to those reported by Showers and Kevlyn (1999). Participants were able to form as many groups as they needed, with as many or as few attributes as needed in each group. Participants could use attributes in more than one group, and they did not have to use attributes that did not describe them. Table 2 presents a card sort generated by an actual participant in this study who experienced childhood emotional maltreatment.

After completing the card-sorting task, participants completed supplementary rating sheets for each of the self-aspect groups generated during the card sort, indicating their positivity, negativity, and importance on 7-point Likert-type scales. From the card sort and the supplementary ratings, the following indices were computed:

Compartmentalization (phi). The measure of compartmentalization is a phi coefficient (or Cramer's V; Cramer, 1974; Everitt, 1977). Compartmentalization is an index of the tendency for positive and negative attributes to appear in separate self-aspects. Phi can range from 0 to 1, with 0 representing a perfectly integrative sort (positive and negative attributes are evenly distributed across all categories) and 1 representing a perfectly compartmentalized sort (each self-aspect category is either purely positive or purely negative). Further details on the computation of phi are provided by Showers and Kevlyn (1999).

Differential Importance (DI). Derived from the work of Pelham and Swann (1989), this is a measure of the relative importance of positive and negative self-aspects that is calculated using the participants' ratings of the positivity, negativity, and importance of each self-aspect (see Showers, 1992a). Scores can range from -1 to +1, with positive scores indicating that relatively positive groups are considered more important than

TABLE 2. Actual Card Sort Illustrating Compartmentalization

Me as a college student	Me as an employee	Me as a friend	Me in a new situation	Me in a close romantic relationship	Me when I'm alone	Me when I'm with my family
Intelligent	Hardworking	Giving	–Uncomfortable	– Immature	–Sad & Blue	– Weary
Successful	Capable	Outgoing	– Inferior	– Indecisive	– Tense	– Tense
Confident	Energetic	Friendly	– Insecure	– Insecure	– Isolated	– Uncomfortable
Capable	Organized	Happy	– Not the “real me”	– Like a failure	– Insecure	– Disagreeing
Hardworking	Mature	Disorganized	–Tense	–Uncomfortable	– Indecisive	– Unloved
Independent		Communicative			– Uncomfortable	
Interested		Comfortable				

Note: Negative attributes are identified by a minus sign. For this card sort, the following parameters were computed: compartmentalization, .96; proportion of negative attributes, .58; differential importance, –.45; and self-complexity, 3.27.

negative ones, and negative scores indicating that relatively negative groups are considered more important than positive ones.

Proportion of Negative Attributes (neg). This measure of self-concept content is the number of negative attributes appearing in a person's card sort divided by the total number of attributes used.

Self-Complexity. The index of self-complexity is the *H* statistic, a measure of dimensionality that represents the number of independent group combinations implicit in an individual's card sort (Linville, 1987; Scott, 1969). Self-complexity is positively related to the number of self-aspects a person generates and inversely related to the extent to which groups of attributes within different self-aspects overlap.

Measures of Psychological Adjustment: Well-Being and Distress

Measures of psychological adjustment ranged from those that are sensitive to the positive aspects of adjustment to those that assess pathological symptoms. The Scales of Psychological Well-Being (Ryff, 1989) assess the following positive aspects of adjustment: autonomy ($\alpha = .85$), environmental mastery ($\alpha = .87$), personal growth ($\alpha = .86$), positive relations with others ($\alpha = .88$), purpose in life ($\alpha = .89$), and self-acceptance ($\alpha = .94$). To assess negative affectivity, participants completed the Beck Depression Inventory (BDI; Beck, 1967; $\alpha = .86$) and the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; $\alpha = .89$). The Symptom Checklist-90-R (SCL-90-R; Derogatis, 1983) includes a global severity index (GSI), which is an overall measure of distress based on nine clinical subscales (somatization, obsessive-compulsivity, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism). For the current sample, the internal consistency of the GSI was quite high, $\alpha = .95$.

Measures of Psychological Adjustment: Defenses and Coping

The construct of compartmentalization has been compared to the more extreme psychological defenses of splitting or borderline personality, in which people experience extremely positive or negative selves that are poorly integrated (cf. Showers, 1992a). Therefore, we included the following measures of these characteristics as well as a broad-based measure of psychological defenses.

The Defense Style Questionnaire (DSQ; Bond, Gardner, Christian, & Segal, 1983) identifies four factor-analytically derived dimensions that vary in maturity (Bond & Wesley, 1996). These four defense styles are maladaptive action (e.g., regression, passive-aggression, and projection; $\alpha = .83$), image-distorting (e.g., omnipotence/devaluation, splitting, and idealization; $\alpha = .66$), self-sacrificing (e.g., pseudo-altruism, denial, and reaction formation; $\alpha = .62$), and the adaptive defense style

(e.g., suppression, sublimation, and humor; $\alpha = .62$). The Splitting Scale (Gerson, 1984) assesses the characteristic use of splitting as a defense mechanism (e.g., identity fragmentation and large shifts in the evaluation of the self or others; $\alpha = .61$). The Borderline Features Scale of the Personality Assessment Inventory (Morey, 1991) measures components of borderline personality functioning such as affective instability (i.e., heightened emotional responsiveness and mood lability) and identity problems (i.e., feelings of emptiness and uncertainty about major life issues). For the current sample, the internal consistency of the Borderline Features Scale was high, $\alpha = .87$.

Laboratory Procedure

Participants completed two laboratory sessions scheduled one week apart in groups of two to eight participants. Experimenters were blind to the maltreatment status of the participant. During the first session, participants completed measures of self-concept content and structure, depression, self-esteem, and well-being. During the second session, participants completed measures of defenses and distress. In addition, participants completed 12 physical maltreatment items from the LEQ ($\alpha = .81$, $N = 331$) and a subset of sexual and emotional maltreatment items from the LEQ (to serve as a reliability check against the screening data).

RESULTS

The maltreatment check items administered in the laboratory session were compared to the screening questionnaire to identify inconsistent responses. Data for eight individuals (2 emotionally maltreated and 6 sexually maltreated) who reported maltreatment on the screening questionnaire but not on the laboratory check items were excluded. Data from four participants were excluded for failure to follow the card-sort instructions and data from 13 individuals were excluded because their card sorts did not include at least two negative attributes. (The latter criterion is necessary for the computation of phi, the index of compartmentalization. Studies of compartmentalization typically exclude 5 to 8% of participants for this reason [e.g., Showers et al., 1998].) The final sample for the analyses was $N = 331$, comprised of 92 emotionally maltreated, 76 sexually maltreated, and 163 low-maltreatment participants. Demographic information for these final participants appears in Table 1 (column 3). Compared to the recruitment sample, the final participants were more likely to be from a single-parent family, $t(789) = 2.03$, $p < .05$. There were no other demographic differences, $t_s(789) < 1.40$, *ns*.

TABLE 3. Factor Loadings for Measures of Psychological Adjustment

	Factor 1 Positive Adjustment	Factor 2 Negative Adjustment	Factor 3 Mature Defenses
Self-acceptance	.85	-.33	.09
Self-esteem	.82	-.29	-.03
Personal growth	.76	-.09	.20
Purpose in life	.76	-.29	.12
Environmental mastery	.73	-.43	.15
Autonomy	.71	-.03	-.31
Positive relations with others	.67	-.37	.22
Borderline features	-.36	.77	-.22
Maladaptive action (DSQ)	-.39	.73	.19
Global Severity Index	-.40	.72	-.08
Image-distorting (DSQ)	.15	.70	.09
Depression	-.53	.62	-.13
Splitting	-.34	.57	.11
Self-Sacrificing (DSQ)	-.09	-.05	.84
Adaptive (DSQ)	.39	.14	.69

Note. $N = 356$. DSQ = Defense Style Questionnaire (Bond et al., 1983).

FACTOR ANALYSIS OF ADJUSTMENT VARIABLES

Because a wide range of adjustment variables were included in the study, a factor analysis was conducted to reduce these to their basic components. Scores for all laboratory session participants ($N = 356$) on all 15 adjustment variables (six subscales from the Scales of Psychological Well-Being; RSES; BDI; GSI; borderline features; splitting, and four subscales from the DSQ) were entered into a principal components factor analysis with varimax rotation. This procedure resulted in 3 factors with eigenvalues greater than one, which we labeled as follows: Positive Adjustment, $\alpha = .90$; Negative Adjustment, $\alpha = .73$; and Mature Defenses, $\alpha = .50$. Table 3 presents the factor loadings. The variables loading on the first two factors were standardized and averaged to produce a composite score for each factor. The third factor was dropped because of its low internal consistency.

DESCRIPTIVE STATISTICS

Table 4 presents descriptive statistics and intercorrelations for the maltreatment variables, self-concept variables, and the adjustment factors

TABLE 4. Intercorrelations and Descriptive Statistics for Self-Concept and Psychological Adjustment

	1	2	3	4	5	6	7	8	9
1. Emotional maltreatment	—	-.05	.45***	-.06	-.22**	.09	.17*	-.19*	.22**
2. Sexual maltreatment	.34***	—	.17*	-.11	.06	-.08	.06	.06	-.06
3. Physical maltreatment	.64***	.36***	—	-.03	-.05	.05	.09	.02	.04
4. Compartmentalization	.01	-.05	-.03	—	.13	.36***	-.20**	-.08	.02
5. Differential importance	-.25***	-.04	-.15**	.22***	—	-.14	-.14	.41***	-.21**
6. Proportion of negative attributes	.27***	.08	.20***	.37***	-.09	—	.12	-.47***	.32***
7. Self-complexity	.17**	.09	.14*	-.21***	-.21***	.10	—	-.13	.11
8. Positive adjustment factor	-.27***	-.06	-.12*	-.03	.32***	-.47***	-.12*	—	-.56***
9. Negative adjustment factor	.44***	.16**	.30***	-.01	-.26***	.41***	.16**	-.65***	—
<i>M</i> (<i>N</i> = 331)	2.55	1.24	1.55	.71	.46	.30	3.28	-.03	.02
<i>SD</i> (<i>N</i> = 331)	1.11	.52	.59	.24	.43	.15	.75	.81	.75
<i>M</i> (<i>N</i> = 168)	3.41	1.47	1.85	.72	.39	.34	3.37	-.20	.34
<i>SD</i> (<i>N</i> = 168)	.84	.65	.62	.22	.44	.14	.79	.81	.69

Note: Correlations for maltreated individuals (*N* = 168) are presented above the diagonal while correlations for the entire sample (*N* = 331) are presented below the diagonal. Proportion of negative attributes was arcsine transformed and maltreatment scores were square-root transformed. Means and standard deviations shown are the transformed values. Actual values for *N* = 168: proportion of negative attributes, *M* = .33, *SD* = .14; emotional maltreatment, *M* = 11.33, *SD* = 5.68; sexual maltreatment, *M* = 1.58, *SD* = 2.54; physical maltreatment, *M* = 2.82, *SD* = 2.51. Actual values for *N* = 331: proportion of negative attributes, *M* = .29, *SD* = .14; emotional maltreatment, *M* = 6.71, *SD* = 6.28; sexual maltreatment, *M* = .80, *SD* = 1.97; physical maltreatment, *M* = 1.73, *SD* = 2.20. **p* < .05; ***p* < .01; ****p* < .001.

for the entire sample ($N = 331$, lower half) and for the maltreated groups ($N = 168$, upper half). In all analyses, the maltreatment variables were square-root transformed and the proportion of negative attributes was arcsine transformed to reduce skew (Cohen & Cohen, 1983).

SELF-CONCEPT ANALYSES

The association between maltreatment and self-structure was examined using hierarchical multiple regression. Each feature of self-structure (compartmentalization, self-complexity, and differential importance) was examined in a separate regression with the three maltreatment variables (emotional events, sexual events, and physical events) as predictors. On the first step of the regression, the main effects of the maltreatment variables and all demographic variables (age, gender, mother's education, father's education, race, and household structure) were entered. Because of overlap between demographic variables and maltreatment (e.g., the association of sexual maltreatment with household structure), it seemed inappropriate to attribute shared variance to either demographics or maltreatment alone. Therefore, these variables were entered simultaneously and only unique variance was examined. In a second step, two-way interactions of the maltreatment variables were entered. Three-way interactions of the maltreatment variables were not examined because of the very small number of individuals who experienced high levels of both sexual and physical maltreatment but a low level of emotional maltreatment ($N = 5$). As indicated above, the maltreatment variables were square-root transformed to reduce skew (Cohen & Cohen, 1983). Then, following the recommendations of Aiken and West (1991), variables for which interactions would be tested were centered.

2. For example, in the analyses of differential importance and self-complexity, main effects for emotional events were qualified by Emotional \times Father's Education interactions, $\beta_s > .17, ps < .005$. These interactions showed that the lowest differential importance and the highest self-complexity were experienced by individuals with high emotional events and high father's education. In other words, the association between self-structure and maltreatment was stronger when father's education was high. Similarly, the association between differential importance and sexual maltreatment was stronger when mother's education was high, $\beta = .15, p < .02$. Here, high differential importance was observed for individuals with high sexual events and high mother's education, as if mother's education acted as a buffer. These findings are certainly interesting, but they are peripheral to the focus of the present work. Including these interaction terms in both the self-concept and the adjustment regressions would complicate the analyses, but should not affect the main conclusions.

TABLE 5. Hierarchical Regressions of Self-Concept Structure Onto Demographic and Maltreatment Variables

Predictors	Compartmentalization			Differential Importance			Self-Complexity		
	Cumulative R^2	Increase in R^2	sr	Cumulative R^2	Increase in R^2	sr	Cumulative R^2	Increase in R^2	sr
Step 1	.06*	.06*		.09***	.09***		.07**	.07**	
Race/ethnicity		.00	.00		.00	.00		.00	.00
Father's education		.00	.00		.01*	-.10*		.00	.06
Mother's education		.00	.00		.00	.00		.00	-.03
Single parent household		.02**	-.15**		.00	-.03		.02*	.13*
Two biological parents		.00	-.04		.00	-.04		.00	-.00
Age		.00	.00		.00	.00		.00	.00
Gender		.02**	-.15**		.01	-.08		.00	-.00
Emotional Maltreatment		.00	.00		.05***	-.22***		.01*	.10*
Sexual Maltreatment		.00	.00		.00	.00		.00	.00
Physical Maltreatment		.00	.00		.00	.00		.00	.00
Step 2	.09**	.03*		.10***	.01		.08*	.01	
Emotional × Sexual		.02**	-.15**		.00	.00		.00	.00
Emotional × Physical		.00	.00		.00	.00		.00	-.06
Sexual × Physical		.00	.01		.00	.00		.00	.00

Note. $N = 331$. sr represents the proportion of variance uniquely accounted for by each predictor, beyond that accounted for by all other predictors at that step. The sign of sr indicates the direction of the relation between each predictor and the criterion variable. Race/ethnicity: 0 = White, non-Hispanic; 1 = non-White. Single parent household: 0 = non-single parent; 1 = single parent. Two biological parents: 0 = not two biological parents; 1 = two biological parents. Gender: 0 = female; 1 = male. *, $p < .05$; **, $p < .01$; ***, $p < .001$.

In preliminary analyses, interactions between demographic variables and maltreatment variables were tested in the regressions. These terms revealed several significant effects that did not affect the main findings of the simpler regressions or their interpretation.² Therefore, the simpler approach in which demographic variables are included only as main effects is presented here.

Compartmentalization. Regression results for the self-structure variables are presented in Table 5. We will focus first on maltreatment effects, reserving discussion of demographic effects for later. In the analysis of phi, the index of compartmentalization, the maltreatment variables obtained an Emotional \times Sexual interaction, $\beta = -.31, p < .005$. Predicted values for this interaction are shown in Figure 1. Because of the skew of the sexual maltreatment variable (even with the square-root transformation), it was not possible to use the conventional approach of computing predicted values at 1 SD above or below the mean. Instead, the predicted values were computed at low sexual events = 0 (-0.4 SD), high sexual events = 2.09 (+1 SD), low emotional events = 1.08 (-1 SD), and high emotional events = 12.34 (+1 SD). For individuals with high emotional, but low sexual events or low emotional, high sexual events, the self-structure is relatively compartmentalized. It is only individuals who report both high sexual and high emotional events that are more integrative than the other maltreated groups (slope for high sexual events, $\beta = -.23, p < .05$; slope for high emotional events, $\beta = -.17, p < .05$). This finding is consistent with the hypothesis that the chronic struggle with salient negative aspects (most likely to occur in the high sexual, high emotional group) is reflected in an integrative structure.

Because phi is correlated with the other indices of self-concept content and structure (see Table 4), a follow-up analysis was conducted in which self-complexity, differential importance, and negativity were

2. For example, in the analyses of differential importance and self-complexity, main effects for emotional events were qualified by Emotional \times Father's Education interactions, $\beta_s > .17, p_s < .005$. These interactions showed that the lowest differential importance and the highest self-complexity were experienced by individuals with high emotional events and high father's education. In other words, the association between self-structure and maltreatment was stronger when father's education was high. Similarly, the association between differential importance and sexual maltreatment was stronger when mother's education was high, $\beta = .15, p < .02$. Here, high differential importance was observed for individuals with high sexual events and high mother's education, as if mother's education acted as a buffer. These findings are certainly interesting, but they are peripheral to the focus of the present work. Including these interaction terms in both the self-concept and the adjustment regressions would complicate the analyses, but should not affect the main conclusions.

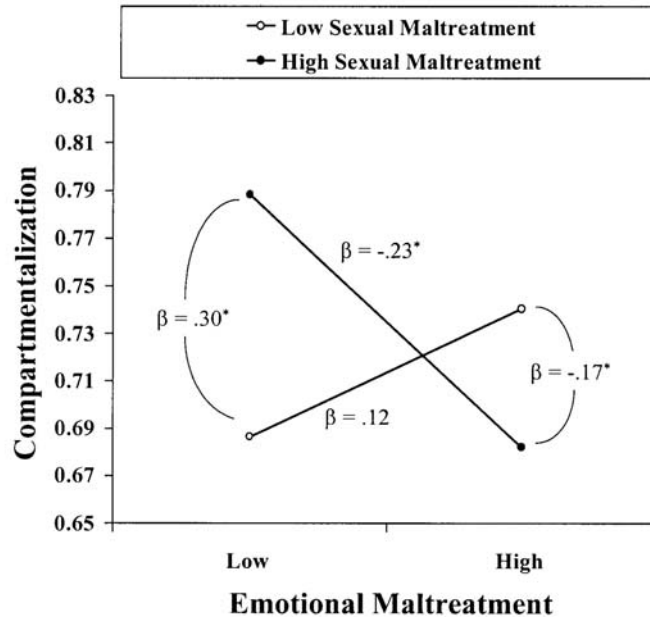


FIGURE 1.

held constant. Controlling for these variables did not affect the Emotional \times Sexual interaction, $\beta = -.29, p < .005$.

Self-Complexity. The analysis of self-complexity revealed a main effect for emotional maltreatment, $\beta = .14, p < .05$, such that emotional events were associated with greater self-complexity. However, when the other self-concept variables were controlled, this effect was nonsignificant, $\beta = .08, ns$. Apparently, the overlap of self-complexity with phi and negativity can account for this maltreatment effect.

Differential Importance. The analysis of differential importance also revealed a main effect for emotional maltreatment, $\beta = -.29, p < .001$, such that emotional events were associated with lower differential importance (i.e., relatively important negative self-aspects). This effect persisted when the other self-concept variables were controlled, $\beta = -.26, p < .001$.

Proportion of Negative Attributes. The proportion of attributes in the card sort that are negative is an index of self-concept content. A fourth regression, using the same predictors described for the self-structure variables, was conducted to examine neg. There was a significant main

effect for emotional maltreatment, $\beta = .25, p < .001$, and a significant Sexual \times Physical interaction, $\beta = -.26, p < .01$. The interaction showed that individuals with either high sexual or high physical events or both all had similarly elevated proportions of negative attributes, $M_{\text{high sex, low phy}} = .33$, $M_{\text{low sex, high phy}} = .33$, $M_{\text{high sex, high phy}} = .31$, compared to individuals with low sexual and low physical events, $M_{\text{low sex, low phy}} = .25$. Therefore, according to this measure, a single form of maltreatment was sufficient to increase negativity, and combined forms of maltreatment did not increase negativity further. These effects persisted when the other self-concept variables were held constant in the analysis.

SELF-STRUCTURE AND ADJUSTMENT WITHIN MALTREATED GROUPS (FACTOR APPROACH)

Analyses of adjustment were done within the maltreated groups to test whether the features of the self-concept most characteristic of maltreated individuals were associated with relatively good or poor adjustment. In particular, these analyses tested the possible implications for adjustment of the observed associations of compartmentalization with emotional and sexual maltreatment. Because the association between self-structure and psychological adjustment in unscreened populations is well-known, the present analyses were restricted to the maltreated population. In this way, we consider the possibility that self-structure plays a unique role for maltreated individuals.

Three hierarchical regressions were performed for the adjustment factors of Positive Adjustment and Negative Adjustment, respectively. The critical terms in these regressions are the interactions of the self-concept variables from the previous set of regressions with the maltreatment variables that predicted them. So, for example, because we found earlier that the Emotional \times Sexual interaction predicts phi (such that high-high events are associated with low phi or relative integration), in the present analyses we wanted to test whether integrative individuals with high levels of emotional and sexual maltreatment have relatively good or poor adjustment. [In other words, we wanted to test the Emotional \times Sexual \times Phi interaction.] The other critical interactions would be Emotional \times DI and Sexual \times Physical \times Neg.

The format of these adjustment regressions was as follows: On Step 1, all seven demographic variables were entered. On Step 2, main effects for the three maltreatment variables and the three self-concept variables (phi, DI, and neg) were entered. On Step 3, all possible two-way interactions of the Step 2 variables were entered. On Step 4, two three-way interactions of special significance—Emotional \times Sexual \times Phi and Sexual

TABLE 6. Hierarchical Regressions Within Maltreated Participants of Positive Adjustment and Negative Adjustment onto Demographic, Maltreatment, and Self-Concept Variables

Predictors	Positive Adjustment				Negative Adjustment			
	Cumulative R^2	Increase in R^2	sr^2	sr	Cumulative R^2	Increase in R^2	sr^2	sr
Step 1	.07	.07			.05	.05		
Race/ethnicity			.00	.00			.00	.00
Father's education			.02	-.13			.00	.00
Mother's education			.01	.10			.00	.00
Single-parent household			.00	.00			.00	.00
Two biological parents			.00	.00			.00	.00
Age			.03*	.16*			.03*	-.18*
Gender			.00	-.02			.02	.13
Step 2	.41***	.34***			.22***	.17***		
Emotional Maltreatment			.03*	-.18*			.05**	.21**
Sexual Maltreatment			.00	-.03			.00	.00
Physical Maltreatment			.01	.11			.00	-.05
Compartmentalization			.00	.00			.00	-.02
Differential Importance			.12***	.34***			.01	-.07
Proportion of Negatives			.25***	-.50***			.10***	.31***

	.46***	.05		.28**	.06				
Step 3^a									
Emotional × Sexual			.01	-.09		.00		.00	.00
Emotional × Physical			.00	.00		.02		.02	-.13
Emotional × Phi			.01	-.11		.00		.00	.00
Emotional × DI			.03*	.17*		.00		.00	.00
Emotional × Neg			.01	.08		.00		.00	-.03
Sexual × Physical			.00	.06		.00		.00	.07
Sexual × Phi			.00	.00		.00		.00	-.07
Sexual × Neg			.00	.05		.00		.00	.00
Physical × Neg			.00	.00		.00		.00	.00
Phi × Neg			.01	.10		.00		.00	.00
Steps 4–6									
Emotional × Sexual × Phi	.47***	.01			.36***	.08		.02*	.15*
Emotional × Physical × Neg			.02	.13				.00	.00
Emotional × Sexual × Neg			.01	.07				.03*	-.17*
Emotional × Phi × Neg			—	—				.02*	.15*

Note. $N = 168$. sr^2 represents the proportion of variance uniquely accounted for by each predictor, beyond that accounted for by all other predictors at that step. The sign of sr indicates the direction of the relation between each predictor and the criterion variable. Race/ethnicity: 0 = White, non-Hispanic; 1 = non-White. Single-parent household: 0 = non-single parent; 1 = single parent. Two biological parents: 0 = not two biological parents; 1 = two biological parents. Gender: 0 = female; 1 = male. All interactions that did not approach conventional levels of significance and were not part of higher-order interactions were not included in the table. * $p < .05$; ** $p < .01$; *** $p < .001$.

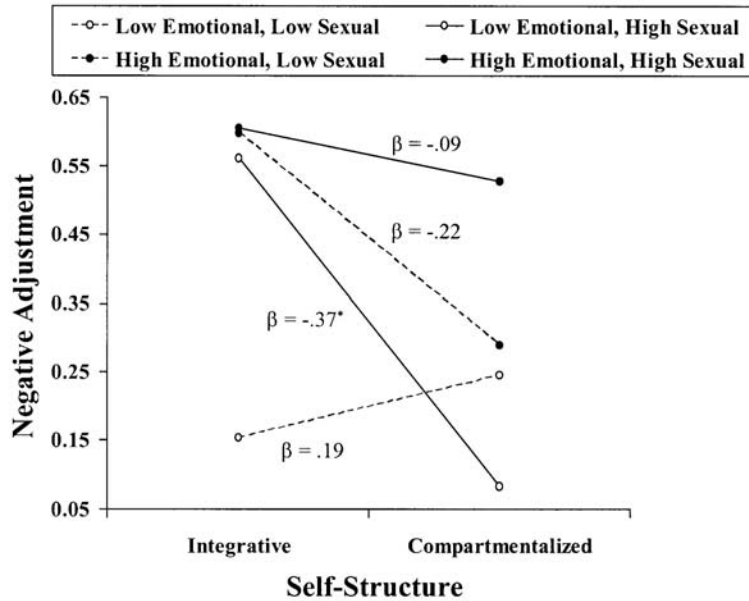


FIGURE 2.

\times Physical \times Neg—were entered. On Step 5, all remaining three-way interactions of maltreatment and self-concept variables were entered stepwise ($p < .05$).³

The results of these regressions appear in Table 6. For the Positive Adjustment factor, significant main effects of emotional events, DI, and neg were qualified by an Emotional \times DI interaction, $\beta = .18, p < .04$, such that individuals with high levels of emotional maltreatment and low DI showed the poorest adjustment. The critical Emotional \times Sexual \times Phi interaction was marginally significant, $\beta = -.21, p < .10$, such that compartmentalized individuals with high levels of both emotional and sexual maltreatment reported the poorest adjustment.

For the Negative Adjustment factor, significant main effects of emo-

3. Twenty three-way interaction terms can be generated from the six predictors entered on Step 2 of the adjustment regressions. Entering all 20 terms would reduce the power of the analysis and, because of collinearity, could underestimate the role of the critical Emotional \times Sexual \times Phi and Sexual \times Physical \times Neg interactions. For this reason, we adopted the stepwise approach described for Steps 4 and 5 of the adjustment regressions.

tional events and neg were qualified by three 3-way interactions—Emotional \times Sexual \times Phi, Emotional \times Phi \times Neg, and Emotional \times Sexual \times Neg. Predicted values for the Emotional \times Sexual \times Phi interaction, $\beta = .32, p < .03$, are shown in Figure 2. For individuals with high sexual, but low emotional events, integrative self-organization was correlated with more negative adjustment, simple slope $\beta = -.37, p < .04$; although a similar pattern was indicated for individuals with high emotional, but low sexual events, the simple slope was not significant, $\beta = -.22, ns$. Interestingly, for those individuals with high sexual and high emotional events (i.e., the most integrative group), this association was near zero, $\beta = -.09, ns$. In other words, for individuals reporting only sexual maltreatment, integration was associated with negative adjustment (consistent with the hypothesis that integration is a sign of struggle). For individuals reporting emotional maltreatment, integration was not significantly associated with adjustment.

The other three-way interactions for Negative Adjustment were not especially relevant to the present hypotheses. Predicted values for the Emotional \times Phi \times Neg interaction, $\beta = .25, p < .04$, indicated an association between integrative organization and negative adjustment for individuals with low emotional events and high negativity, simple slope $\beta = -.46, p = .04$. We speculate that individuals who have negative self-concepts without maltreatment may also be engaging in an integrative struggle with negative attributes. Predicted values for the Emotional \times Sexual \times Neg interaction, $\beta = -.36, p < .02$, simply indicated that negative adjustment was most pronounced in individuals who reported one or both forms of maltreatment and who had relatively negative self-concepts.

When self-complexity was included in these analyses, the effects reported above were unchanged. In addition, for Positive Adjustment, two interactions involving self-complexity were obtained. The Self-Complexity \times DI interaction, $\beta = -.20, p < .01$, revealed that low differential importance was only associated with poor adjustment for individuals low in self-complexity. In other words, high self-complexity may help to buffer the effects of important negative attributes. The Phi \times Self-Complexity interaction, $\beta = -.15, p < .05$, indicated that integratives who also had high self-complexity reported more positive adjustment than integratives with low self-complexity. This finding seems consistent with the view that effective integration is an effortful process involving a complex perspective on the self.

SELF-STRUCTURE AND ADJUSTMENT WITHIN MALTREATED GROUPS (INDIVIDUAL ADJUSTMENT VARIABLES)

Despite the good reliability of the Negative Adjustment factor, this factor comprises a set of variables that are not typically combined. In order to maximize the contribution of this research to literatures on specific adjustment problems, the adjustment regression was repeated for each of four component variables: GSI, depression, splitting, and borderline features. Only the analysis for GSI replicated the critical three-way interaction observed for the Negative Adjustment factor (with a similar pattern of predicted values): Emotional \times Sexual \times Phi, $\beta = .39, p < .01$. The analyses of depression and splitting obtained quite different results, indicating that compartmentalization was correlated with poor adjustment under certain conditions. For depression, two interactions involving compartmentalization (Emotional \times Physical \times Phi, $\beta = -.34, p < .01$; Sexual \times Phi \times DI, $\beta = -.27, p < .02$) indicated that compartmentalization was correlated with greater depression for individuals with high emotional and low physical events or high sexual events and low DI. For splitting, two interactions involving compartmentalization (Phi \times DI \times Neg, $\beta = -.27, p < .005$; Sexual \times Phi \times DI, $\beta = -.27, p < .03$) showed that splitting was associated with negative compartmentalization, especially when the self-concept was especially negative or the individual reported sexual maltreatment. Finally, the analysis of borderline features revealed no effects for compartmentalization; one interesting result was the high incidence of borderline features for individuals with high DI and high physical (but low emotional) maltreatment, Emotional \times Physical \times DI, $\beta = -.26, p < .01$.

DEMOGRAPHIC EFFECTS

For the self-concept variables, household structure (i.e., coming from a single-parent family) was associated with greater integration, greater self-complexity, and greater negativity, $\beta_s > .15, p_s < .05$. Females were found to possess more compartmentalized self-structures, $\beta = .15, p < .001$, an effect that has been found in only one previous study (Jagacinski, Showers, & Duda, 2000). It is possible that this effect is due to the prevalence of women in the sexually maltreated group.

In preliminary analyses, we entered two-way interactions of demographic variables on the second step, and we allowed demographic variables to interact with maltreatment and self-concept variables. Although a variety of significant demographic interactions emerged, they did not alter the significant associations between maltreatment and

self-concept in our initial regressions, nor did that alter the critical interactions of self-concept and maltreatment in the adjustment regressions.

For the adjustment factors, the only significant demographic variable was age, such that older participants reported higher positive adjustment, $\beta = .18, p < .03$, and lower negative adjustment, $\beta = -.19, p < .02$.

DISCUSSION

This study found that college students who reported only childhood sexual maltreatment had a more compartmentalized self-structure than a low- (or no-) maltreatment comparison group. Individuals who reported high levels of both sexual and emotional maltreatment were more integrative than those with sexual maltreatment only or emotional maltreatment only. The compartmentalization of individuals with only one form of maltreatment is consistent with previous literature showing greater compartmentalization in college students experiencing high stress (Showers et al., 1998). Overall, these findings are consistent with a theoretical model that suggests that compartmentalization is a very effective and efficient approach to the organization of self-knowledge, as long as negative attributes can successfully be avoided. The relatively integrative self-structure of individuals reporting high sexual *and* high emotional maltreatment is consistent with the view that integration may correspond to an ongoing struggle with chronically salient, difficult-to-avoid negative self-beliefs.

Follow-up analyses of psychological adjustment supported these interpretations. For individuals with sexual maltreatment only, compartmentalization was associated with relatively good (less negative) adjustment. This could mean that compartmentalization actually improves adjustment (e.g., by minimizing access to negative self-beliefs and experiences). Alternatively, it could mean that well-adjusted individuals tend to adopt the simpler compartmentalized structure. Follow-up data, based on survey questions administered to our third-semester screening sample, indicated that the perpetrator of maltreatment was less likely to be a caregiver for individuals who experienced sexual events only (56%) than for individuals who experienced both sexual and emotional maltreatment (84%), Wald = 4.63, $p < .04$. This suggests the possibility that compartmentalization is especially effective for individuals with sexual maltreatment only because they can easily compartmentalize the negative attributes derived from experiences with a non-caregiver. Individuals who experience both emotional and sexual maltreatment from a caregiver may not be able to compartmentalize their negative attributes so easily, thereby explaining their reliance on integration.

Consistent with this, there was no significant association between self-structure and adjustment for individuals who reported emotional maltreatment (i.e., those who reported emotional events only and those who reported both sexual and emotional events). Thus, there is no evidence that the integrative structure of the most extreme group (high sexual and high emotional events) was associated with poor adjustment. In fact, for positive adjustment, integrative organization appeared to be associated with greater well-being for this group. It is possible that the nature of emotional maltreatment, such as the extreme negative self-statements that are internalized when caregivers label a child as stupid or worthless, makes integrative thinking about the self especially helpful as a coping strategy, just as the experience of sexual maltreatment by a non-caregiver may lend itself to compartmentalization.

The adjustment problems of individuals with only sexual maltreatment and integrative selves may be dominated by forms of distress assessed by the SCL-90 (General Severity Index). Consistent with past research, negative-compartmentalized individuals still score high on depression. This is the first study to provide empirical evidence linking compartmentalization to splitting, an association that may more likely emerge in a maltreated sample.

Compartmentalization/integration was the only feature of self-structure examined here that was associated with both sexual and emotional maltreatment. Self-complexity was associated with reports of emotional maltreatment, such that high emotional maltreatment was linked to greater self-complexity. However, the association between compartmentalization and (low) self-complexity completely accounts for this effect. In other words, the self-complexity effects were not unique. Emotional maltreatment was also associated with low differential importance; however, emotionally maltreated individuals who scored high on differential importance did not show deficits in positive adjustment, suggesting that high differential importance can buffer negative experience.

Although a strength of this study is its assessment of multiple types of maltreatment, the structural differences observed call for closer examination of the characteristics and circumstances of maltreatment, rather than type alone. In particular, the tendency to form long-term integrative or compartmentalized self-structures may be correlated with such characteristics as the relationship between the child and the perpetrator (Beitchman et al., 1991, 1992; Tyler, 2002; Wyatt & Newcomb, 1990), the frequency and duration of maltreatment (Beitchman et al., 1991, 1992; Kendall-Tackett, Williams, & Finkelhor, 1993), and the age at which maltreatment begins (Belkin, Greene, Rodrigue, & Boggs, 1994; McClellan, McCurry, Ronnei, & Adams, 1996). Such characteristics or

circumstances of maltreatment may have a more direct and unique impact on the self than the particular form that maltreatment takes. Other limitations of the present work include the reliance on retrospective self-reports of maltreatment (Briere & Runtz, 1990; Briere & Zaidi, 1989; Cicchetti & Rizley, 1981; Menard, 1991) and reliance on a few easily assessed demographic factors in identifying the nonmaltreated comparison group.

The present method involved a quasi-extreme groups design. Although all individuals who reported any sexual maltreatment were recruited regardless of emotional maltreatment, among those reporting only emotional events, individuals in the 51st to 80st percentiles were not recruited in order to focus on those individuals most likely to show chronically integrative self-structures. As explained by Zuroff, Mongrain, and Santor (2004), extreme group designs may appropriately increase statistical power, and are typically analyzed by continuous regression techniques without implying a typological approach.

The present findings have potential implications for clinical treatment. Showers, Limke, and Zeigler-Hill (2004) proposed that individuals in psychological treatment may adopt integrative self-structures and styles of thinking in the process of effortfully confronting their negative attributes. The integrative structures of those with the most extreme abuse (i.e., both sexual and emotional events) suggest that these individuals may still be involved in that process. Practitioners should expect that integrative thinking will have both benefits (in terms of working through negative experience) and costs (in terms of residual distress associated with continued attention to negative attributes and experiences). Integrative clients would have a choice of persisting in their struggle or, alternatively, attempting to compartmentalize their negative experiences, thereby minimizing their struggle by putting those attributes and experiences out of mind. Showers et al. suggest that long-term integrators may maintain especially realistic perspectives and develop strength and resilience, even though conventional indicators of adjustment may show some deficits. Individuals who can successfully compartmentalize, either by virtue of the nature of their maltreatment experience (e.g., perpetrated by a non-caregiver) or by virtue of their coping style, will experience the benefits of a more positive outlook and less ongoing struggle.

To clarify issues of causality inherent in the association between self-structure and psychological adjustment, at this point it seems reasonable to assume that causality is bidirectional. People who feel good may find it easier to organize compartmentalized self-structures and, in turn, compartmentalization may minimize access to negative attributes and beliefs. People who are still struggling with their negative experi-

ences or who are dedicated realists may be more likely to develop integrative self-structures that in turn maintain the accessibility of negative self-beliefs and have a residual negative effect on psychological states. The present cross-sectional data clearly do not permit tests of causal hypotheses, but longitudinal data certainly could test the bidirectional processes proposed here.

Because of concerns about causality and the limitations of cross-sectional data, mediational analyses were not a focus of this study. Nonetheless, the present findings seem to preclude a simple mediational role for self-structure. Whereas the most extreme maltreatment (high emotional, high sexual) is associated with integration, it is only for less extremely maltreated individuals (low emotional, high sexual) that integration is associated with adjustment. Thus the criteria for mediation (or moderated mediation) are not met (cf. Baron & Kenny, 1986).

SUMMARY

Among college students who reported childhood maltreatment, integrative self-structures were most likely when the reported maltreatment involved both sexual and emotional events. Otherwise, individuals who reported either sexual events only or emotional events only tended to be relatively compartmentalized, consistent with previous findings for college students under stress. Moreover, compartmentalization was associated with less negative adjustment for individuals who reported sexual events only. For those who reported emotional events (with and without sexual events), there was no significant association between self-structure and adjustment. We suggest that this may be because any costs of integration may be balanced by its relative effectiveness for coping with the direct negative self-statements involved in emotional abuse.

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