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Internal States Language in the Childhood Recollections of Adolescents with and without Abuse Histories

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The authors wish to thank Latasha Scott, Kimberly Turner, and Dawn VanWyk for their assistance with coding and data entry, Erika Lichter for her assistance in data analysis, Alisa Miller and Monica Tsethlikai for their valuable comments on the study design, and Elizabeth Glisky for her contributions in the beginning phases of this project.

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Abstract

This study examined the representation of internal states in childhood recollections of male and female adolescents with and without abuse histories. Participants’ \( N = 71 \) exposure to spousal violence, physical abuse and sexual abuse was documented when they were 6 to 12 years old and six years later when they were 12 to 18 years old. At the Year 6 assessment, teens recollected childhood experiences related to positive, negative, and neutral cues. Recollections were coded for references to emotions, cognitions, perceptions, and physiological states. Emotion terms varied according to childhood abuse history, whereas other internal state language did not. Teens with childhood abuse histories used fewer emotion terms than other teens, but only for memories related to conflict and punishment. Emotion terms were unrelated to depression measured at the second assessment, regardless of abuse history. Explanations for abuse-related patterns of emotional language, and possible links to coping and emotion regulation, are discussed.
Internal States Language in the Childhood Recollections of Adolescents with and without Abuse Histories

A growing literature suggests that references to emotions and other internal states are an important part of autobiographical memories (e.g., Bauer, Stennes, & Haight, 2003; Fivush, Berlin, Sales, Mennuti-Washburn, & Cassidy, 2003a). According to this line of work, recalling one’s feelings, thoughts, perceptions, and physiological states adds vividness to recollections, and sharing these details may enhance relationships by establishing intimacy. Moreover, recalling how one felt or thought about past events is viewed as one way in which people make sense of and find personal significance in their experiences. For this reason, recalling internal states is thought to be especially significant in recollections of negative or traumatic experiences. Indeed, there is evidence that expressing emotional and cognitive reactions to negative experiences actually may lead to improvements in physical and mental health (e.g., Pennebaker, Mayne, & Francis, 1997; Petrie, Booth, & Pennebaker, 1998; Smyth, 1998). Little is known, however, about the ability of individuals exposed to repeated or chronic traumatic experiences, such as domestic violence or abuse, to evaluate and make sense of their pasts. The current investigation is an initial attempt to address this issue in the context of a longitudinal study of family violence. We examined internal states language in the childhood memories of adolescents with and without a history of exposure to various forms of abuse, including spousal violence, child physical abuse and sexual abuse. We were interested in whether teens with abuse histories made similar references to internal states as teens without such histories, as well as whether disclosure of internal states predicted measures of mental health for these two groups of adolescents.
The literature on domestic violence and child abuse suggests that many of the processes that give rise to the use of internal states language may be atypically organized among children exposed to abuse in the home. Some of this research suggests that exposure to abuse might be associated with increased references to internal states in childhood recollections. Compared to most people, individuals exposed to domestic violence and abuse have had a disproportionate number of negative and arousing childhood experiences, and emotions, thoughts, perceptions, and physiological states may be more salient in such experiences than less stressful experiences. Moreover, there is some evidence that abused children and children exposed to domestic violence are hypersensitive in their affective reactions to events involving interpersonal conflict compared to nonabused children (El-Sheikh, 1997; Hennessy, Rabideau, Cicchetti, & Cummings, 1994; Laumakis, Margolin & John, 1998). Abused children, for example, report feeling greater fear in response to interadult anger than nonabused children (Hennessy, et al., 1994). Thus, individuals with childhood abuse histories might make more references to internal states in their childhood recollections than other people, especially when the recollections are related to interpersonal conflict.

On the other hand, there are several reasons to believe that teens with abuse histories might be less likely than other teens to recall and reveal internal states in their autobiographical reports. First and foremost, there is considerable evidence that during childhood, talk about past emotions, and possibly other internal states, is socialized by parents as they encourage children to label and disclose their emotions in conversations about past events (e.g., Adams, Kuebli, Boyle, & Fivush, 1995; Fivush, et al., 2003a; Sales, Fivush, & Peterson, 2003). These conversations are thought to enhance children’s understanding of emotions and emotional language, and help them interpret their own emotional reactions to specific experiences, increase
the salience of affective information, and communicate that emotional disclosure is socially valued. Children exposed to repeated abuse and domestic violence at home, however, are unlikely to have the type of family organization that would lend itself to the socialization of internal states language. In fact, discussion of some events, particularly those that involve family conflict and aggression, may be actively discouraged in these families. Thus, children exposed to abuse may have fewer opportunities than other children to learn how to interpret, label and express emotions and other internal states. Consistent with this argument, abused children seem to have a poorer understanding of emotions in general than other children. Maltreated children are less skilled at identifying others’ emotions (Barahal, Waterman, & Martin, 1981; Camras, Grow, & Ribordy, 1983) and give more inappropriate responses towards distressed peers than other children (Klimes-Dougan & Kistner, 1992; Main & George, 1985). Moreover, many of their experiences, especially those that involve intense physical conflict between family members, may be difficult to understand and appraise. If children exposed to domestic violence and abuse have difficulty identifying and labeling their own and others’ internal states, and if these appraisals are not supported by adults around them, they may well produce fewer, or perhaps more inappropriate, internal states terms.

Additional evidence that abuse exposure might be associated with diminished use of internal states language comes from an extensive literature on the relations between childhood trauma, psychopathology, and autobiographical memory. When asked to recall specific past experiences, adults and adolescents who report a history of childhood trauma are more likely than other people to produce “overgeneral” memories, or generic memories that do not refer to a single episode (de Decker, Hermans, Raes, & Eelen, 2003; Henderson, Hargreaves, Gregory & Williams, 2002; Kuyken & Brewin, 1995). The most widely cited explanation for this pattern is
that it reflects an “avoidant” strategy for emotion regulation; in other words, people who have had repeated traumatic experiences avoid thinking about the details of their pasts to blunt potentially negative affect (Williams, 1995). In support of this claim, teens exposed to domestic violence and physical abuse also have been found to generate fewer negative memories in response to neutral memory prompts than other teens (Johnson, Greenhoot, Glisky, & McCloskey, in press). If people with abuse histories avoid details to regulate their emotions, this strategy also might lead them to avoid recalling and discussing the affective qualities of their past experiences, especially when recollecting negative events. Alternatively, internal states may be less well represented in the memories of individuals with abuse histories simply because overgeneral memories may contain fewer details about internal states than specific memories.

In sum, the literature on child maltreatment and domestic violence provides considerable evidence that individuals with childhood abuse histories might represent emotions, and perhaps other internal states, in their autobiographical memories differently than individuals with no abuse history. One goal of this study was to explore how feelings, thoughts, perceptions, and physiological states are represented in the childhood recollections of adolescents with and without childhood histories of abuse. We examined the childhood autobiographical memories of 12 to 18-year-olds who were taking part in a larger longitudinal study of domestic violence. We selected one subset of teens who had been exposed to physical abuse, sexual abuse, and/or severe spousal violence as children, and a second subset who had no childhood exposure to any forms of abuse. Some of the teens in each of these subgroups were also exposed to abuse as adolescents. Thus, although our primary emphasis was on childhood abuse exposure, we also were able to look at the effects of more recent adolescent exposure to abuse on the qualities of childhood autobiographical memory. All teens participated in a childhood autobiographical
memory interview in which they were asked to generate childhood memories (from age 9 or earlier) in response to specific cue words for positive (present, playing), negative (arguing, punishment), and neutral (car, shopping) events. We were especially interested in the expression of internal states in memories related to arguing and punishment, as this may provide insight into how adolescents with traumatic childhoods evaluate their abusive past experiences.

We expected both age and gender to account for additional variation in the teens’ use of internal states terms. Although most studies of internal states language in autobiographical reports have focused on either young children or adults, research on identity development suggests that efforts to reflect on and make sense of past experiences begin during adolescence and increase with age (McClean & Thorne, 2003; Thorne, 2000). As teens begin to construct life stories, they may integrate information about feelings and other internal states into their childhood recollections. Thus, older teens should make more references to internal states than younger teens. Girls also were expected to mention more internal states in their memories than boys. Several studies indicate that during conversations about the past, parents discuss emotional reactions more with girls than with boys (Adams et al., 1995; Fivush, Brotman, Buckner, & Goodman, 2000), and these conversational differences are mirrored by gender differences in emotional language during childhood and adulthood (Adams et al., 1995; Bauer et al., 2003).

A final goal of this investigation was to determine whether internal states language in autobiographical narratives predicts measures of mental health. Disclosure of internal states, particularly the thoughts and feelings that accompany negative experiences, has long been viewed as adaptive. Fivush and her colleagues (Adams et al., 1995; Fivush et al., 2003a; Sales et al., 2003) have argued that discussing the affective qualities of negative past experiences helps people to distance themselves from their emotional reactions, and to evaluate the personal
significance of those experiences. Finding meaning in the past, in turn, is central to the
construction of a coherent life story and functions as a way of coping with traumatic experiences.
In support of this perspective, a series of studies by Pennebaker and others (see Smyth, 1998, for
a review) indicates that when individuals are asked to write expressive narratives about negative past
experiences they show improvements in physical and psychological functioning over time.
Additional research suggests that it is the references to cognitive terms (e.g., causal terms such as
“effect”, and self-reflective terms such as “realize”) and emotional terms within these narratives
that predict enhanced well-being. For instance, increased use of positive emotion terms and
cognitive terms over time predicts fewer physician visits, fewer self-reported physical symptoms,
and higher lymphocyte counts in adults (Pennebaker et al., 1997; Petrie et al., 1998).
In this study, we related the frequencies of internal states terms in narratives about
childhood experiences to a measure of depressive symptoms. We expected that disclosure of
more feelings and thoughts that accompany early experiences, especially experiences recalled in
response to negative cues, would generally be associated with fewer depressive symptoms.
Because child abuse and domestic violence are associated with elevated rates of depression and
other types of psychopathology (e.g., McCloskey, Figueredo, & Koss, 1995), we also thought
that the effects of internal states language might be more dramatic among individuals with abuse
histories than those without such a history. Reflecting on and reporting internal states associated
with memories of conflict and punishment (i.e., abuse-related memories) might help teens cope
with those traumas and thus serve as a protective factor against their negative effects.
To summarize, the present investigation had two general goals: (a) to examine whether
internal states are represented differently in the childhood recollections of teens with a history of
physical abuse, sexual abuse, or exposure to domestic violence compared to those with no abuse
exposure, and (b) to determine whether disclosures of internal states in childhood memories are
associated with fewer depressive symptoms among adolescents with and without abuse histories.

Method

Participants

The sample consisted of 71 children participating in a longitudinal study designed to
assess the impact of family violence, particularly spousal violence, on children’s mental health.
These participants were selected from a larger sample of 299 children retained in the longitudinal
project. The original sampling procedure involved recruiting battered and non-battered women
and one of their children through posters and announcements placed throughout the community,
including in battered women’s shelters, asking for volunteer women who had been “abused by a
partner in the last year” (for the battered group) or who wanted to participate in “a study on the
family” (for the comparison group). For each family, a “target child” (the participant for the
current study) between 6 and 12 years of age was selected according to a procedure that selected
alternately between male or female sex during the phone intake. We interviewed a total of 363
children and their mothers at Year 1, and tracked 82% of them six years later at the second
interview (Year 6). Further details about recruitment are provided in McCloskey et al. (1995).

The autobiographical memory interviews of 135 of these participants were transcribed
and available for analysis. Selection for transcription was due to random factors unrelated to the
variables of interest in this study, and this subset was similar to the rest of the sample in
demographic characteristics and rate of abuse exposure. For this investigation, we selected
participants who at Year 1 had high levels of exposure to various forms of abuse, or who had not
been exposed to such events during childhood. Participants included in the Abuse Exposure
group \( n = 47 \) reported at least one of the following in the Year 1 assessment: frequent (i.e., 35
to 150 incidents) or severe (e.g., beating, choking) spousal violence, child physical abuse, or child sexual abuse. Moreover, to be included in the Abuse Exposure group the participants’ disclosures of these events had to be corroborated by their mothers’ reports obtained in separate interviews; mother and child had to provide concordant reports on at least 50% of the interview questions. The No Exposure group \((n = 24)\) included only youth from families in which absolutely no spousal aggression, child physical abuse, or child sexual abuse were reported at Year 1, according to both the child’s and the mother’s report. The No Exposure group was smaller than the Abuse Exposure group because many of the families in the sample, even those recruited for the comparison group, had a history of some aggressive displays. Participants who reported moderate levels of domestic violence or whose mothers failed to sufficiently corroborate their Year 1 reports were excluded from this investigation \((n = 63)\). One additional teen whose mother failed to corroborate a Year 6 report of abuse was excluded from the study.

We created groups according to abuse exposure because this approach permitted us to collapse across different forms of abuse (i.e., physical and sexual abuse) measured on different scales. Group comparisons also allowed for simpler explication of abuse effects, particularly when abuse interacted with other variables. Teens exposed to moderate levels of family violence were removed from the sample to maximize our ability to detect effects of abuse on memory.

Forty-one percent of the participants were Caucasian, 40% were Hispanic, 3% were African-American, 4% were Native-American, and 12% were of mixed or unidentified ethnicity. Slightly more than half (55%) were female. The mean age of the children was 9 years (range = 6 to 12) at Year 1 and 15 years (range = 12-18) at Year 6. The mean household income was $1478 per month. All children were living with their mothers and their mother’s partner at Year 1. The mother’s Year 1 partner was the child’s biological father for 55% of the sample. At Year 6,
approximately half (48%) of the mothers were still living with the Year 1 partner, and almost all mothers (93%) were still living with the target child. Teens in the Abuse Exposure group and those in the No Exposure group were similar on all demographic variables except family income; the mean household income was $2040 per month for the No Exposure group and $1191 for the Abuse Exposure group, \( t(69)=3.43, p = .001 \). Male and female participants also were similar on all demographic variables.

We adopted several procedures to deal with ethical issues surrounding potential disclosures of child abuse. During the informed consent procedure, we told children and their mothers that if they revealed that the child had been harmed, we would contact the authorities (two families ended the interview at this point). When child abuse was reported, we contacted Child Protective Services to confirm that the abuse had been previously reported; for 28 of the original 365 families a new complaint was made because no previous report had been filed, and the mother cooperated in all but one case. We also hired a full-time counselor and offered short-term counseling to any family who desired it, and made referrals to local agencies when necessary. All procedures in this study were approved by a university human subjects committee.

**Design and Procedure**

At both Year 1 and Year 6, children and mothers took part in separate three-hour interviews to assess abuse exposure and children’s social, emotional and cognitive functioning.

*Year 1 documentation of abuse exposure.* During the initial assessments, mothers and children were questioned separately about mother-directed battering, child-directed physical abuse, and child sexual abuse. Children were questioned about the frequency with which they had been exposed to child-directed physical abuse and mother-directed battering in the home over the past year with the Conflict Tactics Scale (CTS; Straus, 1979). Children were asked how
many times in the previous year their fathers (stepfathers/mothers’ partners) had done any of the following to their mothers: (1) push, grab, shove; (2) slap; (3) kick, bite or hit with fist; (4) hit or try to hit with something/object; (5) beat for several minutes; (6) choke; and (7) threaten with knife or gun. Factor analysis on these and additional items, reported in detail elsewhere (McCloskey et al., 1995) indicated that the first four items composed a physical abuse factor and the last three items composed an escalated abuse factor. To document their experiences with child physical abuse, the participants were asked about the frequency with which they themselves had been kicked/hit with a fist or burned by either their mothers or their mothers’ partner (or the child’s father or stepfather) in the last year. To facilitate frequency judgments, we used Straus’s response scale of 0-6 (0 = never, 1 = once, 2 = twice, 3 = 3-5 times, 4 = 6-10 times, 5 = 11-20 times, and 6 = more than 20 times), with the aid of a simple histogram that depicted the scale. The same items (and more) were administered to the mothers in separate interviews.

Participants also were interviewed about whether they had ever been sexually abused with the following two questions: “How often has an older person touched you in ways you didn’t like, or hugged you too hard in private, or tried to touch you under your clothes?” and “How often has an older person gotten on top of you or made you lie down so they could get on top of you?” When a child disclosed abuse in response to either question, several follow-up questions were asked to obtain more details about each incident, such as the nature of the abuse, the perpetrator, the child’s age at the time of the event, and the location. These responses were used to verify that the disclosure was a credible report of sexual abuse by an adult rather than sexualized play between children or sexual harassment. Mothers were also asked a comparable set of questions about whether their children had ever been sexually abused.
As described above, the children’s and mothers’ responses to these questions were used to categorize the participants according to Year 1 abuse exposure (i.e., No Exposure vs. Abuse Exposure). Overall the Abuse Exposure participants reported an average of 48.7 (range = 0 to 150) mother-directed violent incidents and 4.5 (range = 0 to 40) incidents in which they themselves had been kicked, beaten or burned in the previous year. The mother’s partner (who was the child’s biological father 49% of the time) was the perpetrator in all but three cases of child abuse; mothers were the perpetrators in those three cases. Eleven participants were sexually abused, either by a family member \((n = 6)\) or family acquaintance \((n = 5)\). All but one of these participants were also exposed to severe spousal violence and/or physical abuse.

*Year 6 documentation of abuse exposure.* The participants’ exposure to spousal violence, child physical abuse and child sexual abuse also was measured at the Year 6 interview. As in the initial interview, mothers and teens were questioned separately about mother-directed battering and child-directed physical abuse in the previous year. In addition, the participants and their mothers were again questioned about whether the child had been sexually abused using the same procedures used during the Year 1 interview.

The information provided by the youths and their mothers was used to determine whether the participants had been exposed to any abuse as adolescents. Although we did exclude one participant whose report of Year 6 abuse did not receive sufficient maternal corroboration, we did not exclude teens exposed to moderate levels of domestic violence at Year 6. Levels of violence were generally lower at Year 6 than at Year 1, in part because about half of the women were with new partners at Year 6 and few non-battered women from Year 1 entered abusive relationships over the delay period. Exclusion of teens exposed to moderate levels of domestic violence at Year 6 would have resulted in substantial attrition and severely limited our ability to
test effects of Year 6 abuse. Thus, the Year 6 Abuse Exposure variable indicated whether the teens were exposed to any spousal violence, physical abuse, or sexual abuse as adolescents. A total of 21 participants were exposed to abuse as adolescents. These participants reported an average of 3.6 (range = 0-13) mother-directed incidents. The mean frequency of child physical abuse incidents reported in this group was 6.2; this mean, however, reflects the report of just one participant who reported 124 incidents. No other participants reported physical abuse at Year 6. Six teens had experienced sexual abuse. Table 1 shows the number of participants in the Year 1 No Exposure and Abuse Exposure groups with and without recent abuse exposure. Only 5 participants were exposed to abuse during adolescence alone. Because of the small number of participants in this category, we did not cross the variables of Year 1 and Year 6 Abuse Exposure in the analyses; rather, we examined only main effects of Year 1 and Year 6 Abuse Exposure.

Insert Table 1 about here

Depression measure. The Year 6 interviews also included a range of measures of adolescent well-being, social adjustment, and psychopathology. For this study, we were especially interested in depressive symptoms. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), which has been validated for use with Caucasian, Hispanic, and African-American adolescents and adults (Roberts, 1992; Roberts, Vernon, & Rhoades, 1989) was used to measure depressive symptoms. This scale asks participants to endorse statements about depressive symptoms (e.g., “In the last week, I thought my life had been a failure.”) on a scale of 0 (none of the time) to 3 (most or all of the time). Overall depression scores are calculated by summing across the individual items; an overall score higher than 15 is seen as an
indicator of clinically significant symptoms of depression (Radloff, 1977). In this sample the average CES-D score was 14.4, and 42% of the teens scored above the cutoff for clinically significant symptoms. Teens with Year 1 abuse had higher scores \((M = 16.6)\) than those without such histories \((M = 10.1)\), \(t(69) = 2.90, p = .005\). Depression did not vary by gender or age.

**Childhood autobiographical memory interview.** At the end of the Year 6 interview, the teens were given a test of childhood autobiographical memory (Crovitz, Harvey, & McKee, 1980), in which they were asked to generate specific childhood memories (from before age 9) in response to three types of cue words: positive (present, playing), neutral (car, shopping), and negative (punishment, arguing). The order of the cue words was randomly determined for each participant. The participants were given three minutes per cue word to generate as many childhood memories as possible. They were asked to estimate the age at which each remembered event occurred, and were encouraged to provide enough detail to identify the event as a one-time experience rather than a generic event. The narratives were audiotaped and transcribed.

**Coding of Autobiographical Memories**

**Internal states language.** The narratives produced in response to each cue were coded for the frequency of internal states terms. Because different subjects generated different numbers of memories of varying lengths, we focused on the overall frequency of internal states terms produced in the three minute period allotted for each cue, summing across individual memories. The coding of internal states language primarily was based on a coding scheme developed and reported by Bauer et al. (2003). We coded internal states terms that fell into one of four mutually exclusive categories: (1) emotion words (e.g., happy, scared), (2) cognition terms (e.g., understand, know), (3) perception terms (e.g., hear, smell), and (4) physiological states terms (e.g., hurt, tired). Cognitive terms included words that referred to thoughts about an experience
as well as metacognitive terms that referred to the status of a reported memory (e.g., “I remember when my dad got a new van,” or “I don’t know what we were arguing about.”).

Emotion terms were further classified according to their valence, explicitness, experiencer, and appropriateness. Valence coding involved categorizing all emotion words as positive (e.g., happy), negative (e.g., scared), or neutral (e.g., didn’t care). Emotion terms were also categorized as explicit expressions of emotion (e.g., “I was really sad”) or implicit references to emotion (e.g., “I cried.”). Coding for the experiencer involved identifying whether each emotion term referred to the participant him or herself (e.g., “I was really scared.”) or another person (e.g., “She was so angry at me.”). Because there is evidence that maltreated children sometimes have inappropriate or atypical affective responses, we added the dimension of appropriateness to the Bauer et al. coding scheme. An emotion term was judged as appropriate if the valence of the emotion was consistent with the valence of the remembered event (e.g., “I felt sad when my brother broke his arm”), or inappropriate if it was inconsistent with the valence of a remembered event, (e.g., “I laughed when my brother broke his arm”). Inappropriate emotion terms, however, were quite rare in these narratives; almost all (97%) were judged appropriate, and the percent of appropriate terms did not vary as a function of Year 1 or Year 6 abuse exposure. Thus the appropriateness dimension was not considered in further analyses.

The internal states coding was completed by two coders who each scored half of the total number of transcripts. Twenty percent of the transcripts were coded by both coders to determine reliability, and average percent agreement was 92% (range = 72-100%).

Basic memory characteristics. We also coded the participants’ responses for several basic memory characteristics. This involved coding for the numbers of specific and “overgeneral” memories, the valence of each memory, the content of each memory, the
estimated age at which the remembered events had occurred, and the length of the overall response to each memory cue. One coder coded two-thirds of the transcripts, and a second coder coded the remaining third. The second coder scored 20 percent of the first coder’s work for reliability. Interrater reliability for each coding dimension was calculated as the number of agreements divided by the total number of possible agreements per interview transcript.

The number of memories produced in response to each cue word was counted and each memory was coded as either specific or overgeneral in order to control for the possible effects of the specificity of subjects’ memories on internal states language. Overgeneral memories were defined as memories that did not contain at least one specific detail that identified an event as a distinct episode (e.g., “We used to play in a shed.”). Average percent agreement for this coding dimension was 97% (range = 95-100%).

For each memory, the participant was also asked to indicate the age at which the remembered event occurred. If a participant changed his or her mind about the age, the most recently reported age was coded. When participants gave more than one age or an age range rather than a specific age for the memory (e.g., “It happened when I was 8 or 9.”), the older of the two ages was used. Interrater agreement was 91% (range = 80-100%).

The overall length of the responses produced to each cue (summing across individual memories) was calculated by using a raw word count procedure described by Dickinson and Poole (2000). All words given in the three-minute response to each cue were counted except those that were off-topic (e.g., “I’m tired”). Average agreement was 97% (range = 93-100%).

To provide information about the types of specific memories generated in response to each cue type, all specific memories were also coded for valence and content. For the valence coding, we were primarily interested in the rate of negative memories generated in response to
each cue type. Negative memories described events that were violent or unpleasant or suggested a dysfunctional interpersonal relationship (e.g., “I remember when my dad ran over my little brother and we had to go to the emergency room.”). Judgments about valence were made from the perspective of an objective observer (i.e., the coder), rather than the teen. For example, if a participant described a serious injury as “funny,” this memory was coded as negative. Because the focus here was on negative memories, and not on the distinction between positive and neutral memories, all other memories were coded as positive/neutral, including pleasant events, events that suggested a positive interpersonal relationship (e.g., “I remember when I got my first bike for Christmas from my parents.”), and more neutral events (e.g., “We went shopping one time and my mom got a new skirt.”). The two coders agreed, on average, on 87% of the valence codes (range = 73-97%).

For the content coding, we were interested in whether participants’ memories, particularly those prompted by negative cues, involved events related to domestic violence and abuse. Thus, we identified the number of specific memories generated per cue that involved the following: physical punishment, nonphysical punishment, physical aggression, death, injury or illness, arguing or fighting, life stress (e.g., parent arrested or child removed from home), and neglectful parent behavior. Average interrater agreement was 90% (range = 76-100%).

Results

The analyses were carried out in three stages. The first stage looked at the characteristics of the participants’ autobiographical memory narratives, such as memory content and the number of memories. The second stage examined internal states language in the narratives, and the extent to which references to internal states varied by abuse history, gender, or age. Finally, in the third phase, we examined whether internal states language predicted depressive symptoms.
Basic Autobiographical Memory Characteristics

First, to examine the extent to which the teens’ memories were related to the cue words, particularly the negative cues, we looked at the types of events participants reported in response to each cue type. Overall, 93% of the memories generated in response to negative cues were about negative events, in contrast to 18% of those prompted by positive cues and 29% of those prompted by neutral cues. We were especially interested in whether participants’ memories involved events related to conflict, such as physical punishment (e.g., spanking), nonphysical punishment (removal of privileges), physical aggression (e.g., being kicked or beaten), death, injury or illness, or arguing or fighting. A majority of the memories generated in response to the negative cues referred to these negative events, whereas very few references to such events were found in memories prompted by positive and neutral cues. For instance, 89% of the memories generated in response to the cue “arguing” involved fights or disagreements, and 86% of those generated in response to the cue “punishment” involved nonphysical punishment, physical punishment, or other forms of physical aggression. In contrast, less than 3% of the memories generated in response to positive or neutral cues involved fights or disagreements, punishment or physical aggression. The proportion of memories related to these events did not differ according to abuse exposure, except that in response to negative cues teens with a childhood abuse history recalled a higher proportion of memories involving physical aggression ($M = 16\%$) than those without such a history ($M = 7\%$), $F(1, 63) = 4.43, p = .04$. Overall, these data indicate that the recollections prompted by the negative cues were highly related to the cues themselves.

Further analyses of the basic characteristics of the teens’ autobiographical memories involved calculating the number of overgeneral memories, the overall number of memories (both specific and generic), the overall narrative length in response to each cue (collapsed across
individual memories), and the mean estimated age for each memory. These data are presented, as a function of Year 1 and Year 6 abuse exposure, in Table 2. To determine whether these memory characteristics varied as a function of abuse exposure or cue type, repeated measures general linear models (GLMs), with cue type as the repeated measure, were conducted. Each model included as predictors a dichotomous indicator of Year 1 abuse exposure and a dichotomous indicator of Year 6 abuse exposure, as well as gender and age. The effect of each variable was estimated with all other variables included in the model. Consistent with a considerable literature on trauma and memory specificity, teens exposed to Year 6 abuse tended to generate more overgeneral memories than other teens, particularly in response to negative and neutral cues ($M_s = .88$ and 1.10 for teens with Year 6 abuse exposure, $M_s = .54$ and .74 for those with no Year 6 exposure), but the interaction between Year 6 abuse and cue type failed to reach significance, $p = .075$. A more detailed examination of the relation between memory specificity and abuse exposure, in which the effects of psychopathology are also considered, is provided in Johnson et al., (in press). The overall number of memories, response length, and mean estimated age did not vary according to Year 1 or Year 6 abuse exposure, cue type, gender or age. The mean estimated age of the participants at the time of the events reported was approximately 7 years for all cues, but individual estimated ages ranged from 3 to 9 years. Thus the experiences participants recalled were events that they believed had taken place 3 to 15 years previously.
Abuse and Internal States Language

Table 3 presents the mean numbers of emotion, cognition, perception, and physiological states terms produced per cue word, for males and females separately and also collapsed across gender. The means along the bottom of the table indicate that the overall frequency of internal states terms was quite low. To examine the use of internal states terms as a function of abuse exposure, gender and age, we conducted a series of repeated measures GLMs with cue type as the repeated measure. One repeated measures GLM was conducted for each internal states language category. Each model included gender, age at Year 6, the dichotomous indicator of Year 1 Abuse Exposure and the dichotomous indicator of Year 6 Abuse Exposure. To control for average response length, it was also included in all models. The effect of each of these variables was estimated with all other variables included in the model. Preliminary analyses indicated that internal states language was unrelated to family income, the number of overgeneral memories, the number of memories produced overall, and the mean estimated age at the time of the reported events, thus these variables were excluded from the final analyses.

The analyses of cognition, perception, and physiological states terms indicated no main effects of Year 1 abuse exposure, Year 6 abuse exposure, or age. Cognition terms did vary according to gender, $F(1, 63) = 6.75, p = .012$, such that females talked more frequently about cognitions than males ($\beta_{female} = .28$). The only predictor of physiological terms was response length, $F(1, 63) = 10.27, p = .002, \beta = .38$. Response length also was marginally related to perception terms, $F(1, 63) = 3.97, p = .051, \beta = .26$. 

Abuse Exposure and Internal States Language
The repeated measures GLM of emotion terms also indicated a significant effect of narrative length across cues, $F(1, 63) = 6.50, p = .02, \beta = -.31$, such that participants who generated longer responses also produced more emotion terms. But this analysis also revealed a significant interaction between cue type and Year 1 abuse, $F(2, 62) = 5.23, p = .008$, over and above the effect of response length. Examination of the univariate analyses indicated that Year 1 abuse was related to the production of significantly fewer emotion terms for negative cues, $F(1, 63) = 4.47, p = .039, \beta = -.25$, but was unrelated to emotional language for positive and neutral cues. As illustrated in Figure 1, this pattern was obtained because teens without a childhood abuse history showed an increased use of emotional language in response to negative cues compared to positive cues, $t(22) = 2.61, p = .02$, and neutral cues, $t(22) = 1.99, p = .06$, whereas teens with a childhood abuse history showed no variation in emotional references according to cue type. Although the means presented in Table 3 suggest that females produced more emotion terms than males, the repeated measures GLM revealed no significant gender effects on emotion terms. References to emotion also were unrelated to age.

To summarize, teens with a childhood history of abuse mentioned fewer emotion terms in their recollections of childhood experiences than other adolescents, but these differences were only observed in memories related to punishment and arguing. In contrast to teens with childhood abuse histories, adolescents who were not maltreated as children made more frequent references to emotion when discussing memories related to conflict and punishment than when recalling other types of (and generally less negative) experiences.
We conducted additional analyses to determine whether the effects of childhood abuse exposure were limited to particular categories of emotional language. Table 4 presents the mean numbers of emotion terms in the teens’ responses to negative cues, as a function of childhood abuse exposure and emotional valence, explicitness, and experiencer. A series of repeated measures GLMs indicated that Year 1 Abuse Exposure did not interact with valence, experincer, or level of explicitness; rather, these analyses revealed only main effects of Year 1 Abuse Exposure across these within-subject factors, $F_{(1, 63)} = 4.82, ps = .032$. Thus, when discussing memories related to arguing and punishment, teens with a childhood abuse history used fewer negative, positive and neutral emotion words than teens without such a history. Moreover, they made fewer explicit and implicit references to emotions, and were unlikely to discuss not only their own emotions but those of other people as well.

Internal States Language and Well-Being

We conducted exploratory correlational analyses to determine whether the internal states language in teens’ childhood autobiographical memories predicted psychological well-being. Specifically, we calculated Pearson product moment correlations between the measure of depressive symptoms and the overall numbers of cognitive terms, perception terms, physiological states terms, and positive and negative emotion terms. Because expression of internal states is thought to be particularly important for negative experiences, we also looked at correlations between depression and the numbers of cognitive, perception, physiological states, and positive and negative emotion terms prompted by the negative cues alone. Finally, because
we were interested in whether internal states language differentially predicted well-being in teens with and without abuse histories, we separately calculated all correlations for teens never exposed to abuse ($n = 19$), teens exposed to either Year 1 or Year 6 abuse ($n = 52$), and all teens. None of these correlations were significant. Only one even approached significance: a negative correlation between depression and the use of positive emotion terms in response to negative cue words among teens with some abuse history ($r = -.25, p = .077$). Given the large number of correlations tested (42), however, this marginal effect could easily have been due to chance.

Discussion

This study provides a first step into understanding the representation of internal states in the childhood recollections of adolescents, including those with abusive childhoods. Our most interesting finding was an interaction between childhood abuse exposure and the type of cue used to elicit childhood memories. Teens with no childhood abuse history exhibited an increase in emotion terms when discussing memories prompted by the negative cues, compared to recollections prompted by positive and neutral cues. This pattern is consistent with recent findings of Fivush and her colleagues that children mentioned more emotions, as well as other internal states, when telling an unfamiliar adult about stressful past experiences than when recalling positive experiences (Fivush, Hazzard, Sales, Safarti, & Brown, 2003b). An analysis of the content of the teens’ memories showed that the recollections prompted by negative cues (arguing and punishment) were almost exclusively negative and highly related to the cues themselves (i.e., involved arguing, fighting, punishment, or physical aggression). In contrast, memories generated in response to positive and neutral cues infrequently referred to negative events, and almost never referred to arguing, fighting, punishment, or physical aggression. Thus, the increase in emotional content was observed when teens described their recollections of
childhood experiences related to conflict. One reason for increased emotional language in these memories may be that emotions are more salient and relevant to conflict-related events (and other negative experiences), than to more positive or neutral experiences. Accordingly, the participants simply may have encoded more information about internal states for events related to arguing and punishment than those related to the neutral and positive cues. This finding also fits well with the view that emotional language in personal recollections reflects later attempts to evaluate and find personal significance in the past, and may represent a form of coping with negative experiences (e.g., Fivush, et al., 2003a; Pennebaker et al., 1997).

In spite of the fact that adolescents with childhood abuse histories probably had childhood experiences with conflict that were even more arousing and distressing than those of other teens, they showed no increase in emotion terms when discussing memories for conflict and punishment, relative to memories prompted by the positive and neutral cues. Indeed, compared to teens with no childhood abuse exposure, these teens generated similar numbers of emotion terms in memories elicited by the positive and neutral cues, but used significantly fewer emotion terms in memories prompted by the negative cues. Thus, youths who grew up in abusive homes seemed just as able as other teens to evaluate and express affective reactions to some kinds of experiences (i.e., positive and neutral experiences). Their inability or unwillingness to share emotional content was limited to memories related to conflict and punishment. These memories are likely to be related to abuse among teens with a childhood abuse history. However, given that both of the negative cues were associated with conflict and punishment, it is not clear whether these effects are specific to abuse-related recollections, or would also be found in other negative recollections. Finally, the effects of childhood abuse did not extend to
disclosures of other categories of internal states. There were no abuse-related differences in
cognitive, perception, and physiological state terms.

The effects of childhood abuse exposure on the affective qualities of negative memories
were consistent regardless of who experienced the emotion, the valence of the emotion term, and
the level of explicitness of the term. Teens with a childhood abuse history were less likely than
other teens to disclose not only their own emotional reactions, but those of other people as well.
Moreover, it was not the case that the effect of childhood abuse history was due to a lower
likelihood of generating positive and neutral emotions in memories of conflict, as one might
expect if the conflict experiences of teens with abuse histories were more negative than those of
other teens. Teens with childhood abuse exposure generated fewer positive, negative, and neutral
emotion terms in response to the negative cues than other teens. Finally, adolescents with
childhood abuse exposure were less likely than other adolescents to mention not only explicit
affective terms, but to recall behaviors that are associated with emotions (e.g., crying). In fact,
not one teen in this group generated an implicit emotion term in response to the negative cues.

Why did adolescents with childhood abuse histories use fewer emotion terms in their
childhood recollections than other adolescents? These effects are most likely not due to a general
absence of emotional socialization or poor understanding of emotions, because they were
specific to certain types of memories. It seems possible that the conflict-related events to which
children with abuse histories were exposed were more confusing and difficult to evaluate than
those experienced by other children, thus children from abusive homes might not have been sure
how they felt about conflict-related events. Moreover, children often rely on adults to help them
interpret emotional events (Adams et al., 1995; Fivush et al., 2003a), but adults in abusive
families may be unlikely to discuss these events with children. In fact, in these families, children
may well be socialized not to share their feelings about this sort of experience. Future research examining the nature of parent-child conversations in such families may shed additional light on the role of socialization in abuse-related differences in personal memories.

Another possibility is that the children who experienced spousal violence or child abuse were desensitized to conflict through repeated exposure, so that these events actually were less arousing than they would have been to nonabused children. Indeed, although several studies have shown that children exposed to abuse and domestic violence report stronger negative responses to conflict than nonabused children (El-Sheikh, 1997; Hennessy et al., 1994; Laumakis et al., 1998), there also is evidence of decreased physiological arousal in response to emotional stimuli among abused children. For instance, Carrey, Butter, Persinger and Bialik (1995) reported that abused children had smaller electrodermal responses to affective slides than a control group.

A final explanation is that the participants did encode affective information about the remembered experiences, but that they later avoided recalling and/or disclosing the information as a strategy for emotion regulation. That is, the teens may have chosen not to think or talk about their own and others’ affective reactions to conflict-related experiences because they were too painful. Similar claims about an association between childhood trauma and affect control in autobiographical memory have been made in the literature on autobiographical memory specificity (e.g., Williams, 1995). As discussed in the introduction, adults and adolescents who report a childhood trauma history also tend to report “overgeneral” or generic memories when asked to recall specific autobiographical episodes (de Decker et al., 2003; Henderson et al., 2002; Kuyken & Brewin, 1995). This pattern is often interpreted as evidence that repeated negative experiences in childhood lead to a general tendency to avoid thinking about the details of past events in order to blunt potentially negative affect. In the current study, the lack of emotional
content in teens’ memories cannot be explained as a direct consequence of overgeneral
memories, as the frequency of overgeneral memories was not related to the amount of emotional
language produced in response to each cue. Moreover, childhood abuse history was not
associated with production of overgeneral memories. Nevertheless, the results observed here are
consistent with the view that a history of traumatic experiences may lead to strategic avoidance
of certain types of memory content in order to regulate affect. In light of these findings, more
systematic research on the links between autobiographical memory and emotion regulation
processes seems warranted.

Unlike childhood abuse exposure, recent exposure to abuse was unrelated to the
emotional content of childhood recollections. Admittedly, the sample was selected on the basis
of Year 1 abuse exposure, so far fewer teens were exposed to recent abuse than to childhood
abuse, and among teens exposed to recent abuse, the level of violence was more moderate than in
Year 1. Thus tests of the effect of recent abuse in this study were much weaker than tests of
childhood abuse. This pattern also could reflect age differences in the effects of abuse on
affective processing or emotional socialization. Another explanation is that the childhood
conflict experiences of teens with recent abuse exposure were not necessarily abuse-related and
traumatic, thus if abuse-related effects simply reflect differences in the events being
remembered, we would only expect to see effects of recent abuse on recent, not childhood,
conflict memories.

Like previous research on children and adults (e.g., Adams et al., 1995; Bauer et al.,
2003; Fivush et al., 2000), this investigation showed that adolescent girls used more internal
states terms than adolescent boys in all but one category. Yet only the gender difference for
cognitive terms was statistically significant when overall response length and abuse exposure
were accounted for. In addition, contrary to predictions from the literature on identity development (e.g., Thorne, 2000), the use of internal states terms did not increase with age. One interpretation of the lack of age-related variation is that significant advances in the integration of information about internal states into personal memories are not made over the course of adolescence. Indeed, McAdams (1993) has suggested that true attempts to construct a coherent life story do not begin until adulthood.

A more likely reason for these discrepancies is that the autobiographical memory assessment in this study was not designed to encourage reflection and meaning-making. The teens were told to generate as many memories as possible in each three-minute time period, and were encouraged to elaborate to the degree that a specific episode could be identified. This procedure may have inhibited the tendency to reflect on and edit recollections at the time of recall. In contrast, other studies have used procedures that may be more supportive of reflection and evaluation, such as extensive interviews, often between parents and children (e.g., Adams et al., 1995; Fivush et al., 2003a), or opportunities to write about memories over the course of a week (e.g., Bauer et al., 2003). In light of these procedural variations, it is not surprising that the overall frequency of internal states language in the present investigation was quite low compared to other studies (e.g., Bauer et al., 2003). It is also important to note that the autobiographical memory interview took place at the end of an extensive interview in which participants were questioned about a variety of issues, including abuse exposure and social and emotional functioning, and these earlier interview questions might influenced the types of memories reported. Thus, the effects of abuse on the affective quality of childhood recollections should be examined in other recall contexts. Research on the context specificity of the effects observed in this study might even provide additional insight into the underlying mechanisms.
Although teens with traumatic childhoods were less likely than other youths to recall and/or disclose their emotional reactions to negative childhood experiences, our results do not provide evidence that failure to use emotional language is maladaptive. Current theory and research on emotional disclosure suggests that expression of emotions and other internal states in negative autobiographical memories reflects coping and leads to improved physical and psychological functioning (e.g., Fivush, et al., 2003a; Fivush et al., 2003b; Smyth, 1998; Pennebaker et al., 1997), whereas inhibition of emotional responses leads to deleterious effects (e.g., Larson & Chastain, 1990). On the basis of this literature, we expected teens who shared more emotions and other internal states to have fewer depressive symptoms. We also predicted that disclosure of internal states would be especially beneficial to teens with abuse histories, as they are especially at risk for depression and other forms of psychopathology (McCloskey et al., 1995). Our exploratory correlational analyses, however, failed to reveal any significant links between depressive symptoms and the use of internal states language, for teens with or without traumatic childhoods. One interpretation is that expression of emotions in childhood recollections of conflict is not always beneficial, and in some situations failure to discuss emotions actually may be protective. Indeed, research on the association between rumination and depression suggests that reflecting on negative experiences is not always adaptive (e.g., Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998). In addition, the literature on the benefits of emotional expression has focused almost exclusively on adults, and it is possible that the adolescents in this study had not developed the cognitive and emotional skills required to find significance in negative childhood experiences and to benefit from doing so. It remains to be seen whether internal states are better represented in the childhood recollections of these individuals as adults, and whether such language predicts well-being during adulthood.
There also are some methodological explanations for the lack of association between internal states disclosure and well-being in this study. First, we only examined one measure of well-being, and it is possible that beneficial effects might be found if we looked at other outcome measures. In fact, research on the effects of expressive writing has shown more consistent benefits to physical health than psychological health (Pennebaker et al., 1997; Petrie et al., 1998; Smyth, 1998). Second, in most research on the adaptive value of internal states disclosure, participants are asked to select memories of events that are personally significant and cause them ongoing distress, virtually ensuring that they will choose memories in which they have stored some emotional information (Smyth, 1998). In the present study, participants were asked to select memories based on their association with cue words, not their affective qualities. Moreover, an interview procedure that encourages reflection on the past might be more likely to reveal links between internal states language and psychological functioning. Finally, the teens’ childhood recollections may have been too far removed in time to relate to current well being, as stronger links between emotional expression and well-being are found when participants are asked to recollect ongoing, rather than past, traumas (Smyth, 1998).

In conclusion, this study shows that the affective characteristics of adolescents’ childhood recollections vary according to their childhood exposure to abuse. Adolescents who as children were exposed to severe spousal violence, physical abuse or sexual abuse provided significantly less emotional content in memories related to conflict and punishment memories than other teens, even though their experiences with such events were probably more emotionally arousing than those of nonabused participants. Low rates of emotional language, however, were not associated with poorer psychological functioning as measured by the Center for Epidemiologic Studies Depression Scale. These findings have interesting implications for clinicians who work
with adolescents, as it may be especially difficult for teens with traumatic childhoods to evaluate their negative experiences. Additional work, however, is necessary to understand the function of affective language in adolescents’ childhood memories, particularly for teens with childhood abuse histories. More generally, this study contributes to the scientific literature illustrating that abuse is associated with atypical patterns of emotional, social, and cognitive development.
References


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11, 165-175.


Table 1.

*Number of participants with and without abuse exposure at Years 1 and 6 (with number of female participants indicated in parentheses).*

<table>
<thead>
<tr>
<th></th>
<th>Year 6 No Exposure</th>
<th>Year 6 Abuse Exposure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 No Exposure</td>
<td>19</td>
<td>5</td>
<td>24 (15)</td>
</tr>
<tr>
<td>Year 1 Abuse Exposure</td>
<td>31</td>
<td>16</td>
<td>47 (24)</td>
</tr>
<tr>
<td>Total</td>
<td>50 (25)</td>
<td>21 (14)</td>
<td>71 (39)</td>
</tr>
</tbody>
</table>
Table 2.

*Mean number of memories and overall narrative length (and standard deviations), as a function of Year 1 Abuse Exposure and Year 6 Abuse Exposure.*

<table>
<thead>
<tr>
<th>Memory Measures</th>
<th>Year 1 Abuse</th>
<th>Year 6 Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Exposure</td>
<td>Abuse Exposure</td>
</tr>
<tr>
<td># Overgeneral Memories/Cue</td>
<td>0.76 (0.77)</td>
<td>0.77 (0.62)</td>
</tr>
<tr>
<td># Memories</td>
<td>4.80 (1.89)</td>
<td>5.10 (2.60)</td>
</tr>
<tr>
<td>Overall/Cue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Response Length (words)/Cue</td>
<td>208 (86.6)</td>
<td>197 (92.7)</td>
</tr>
<tr>
<td>Mean Estimated Age (years)/Cue</td>
<td>7.1 (0.8)</td>
<td>7.1 (0.8)</td>
</tr>
</tbody>
</table>
Table 3.

*Mean number (and standard deviations) of internal states terms generated per cue word, as a function of category and gender.*

<table>
<thead>
<tr>
<th></th>
<th># Emotion</th>
<th># Cognition</th>
<th># Perception</th>
<th># Physiological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>0.20 (0.38)</td>
<td>0.60 (1.15)</td>
<td>0.24 (0.56)</td>
<td>0.03 (0.09)</td>
</tr>
<tr>
<td>Females</td>
<td>0.47 (0.77)</td>
<td>2.24 (2.87)</td>
<td>0.16 (0.27)</td>
<td>0.07 (0.17)</td>
</tr>
<tr>
<td>Overall Mean</td>
<td>0.35 (0.63)</td>
<td>1.50 (2.39)</td>
<td>0.20 (0.43)</td>
<td>0.05 (0.14)</td>
</tr>
</tbody>
</table>
Table 4.

*Mean number of emotion terms in different categories, as a function of Year 1 abuse exposure.*

<table>
<thead>
<tr>
<th></th>
<th>No Childhood Exposure</th>
<th>Childhood Abuse Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Valence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>0.70 (1.24)</td>
<td>0.25 (0.57)</td>
</tr>
<tr>
<td>Positive</td>
<td>0.13 (0.43)</td>
<td>0.01 (0.07)</td>
</tr>
<tr>
<td>Neutral</td>
<td>0.02 (0.10)</td>
<td>0.00 (0.00)</td>
</tr>
<tr>
<td><strong>Explicitness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explicit</td>
<td>0.52 (1.04)</td>
<td>0.26 (0.58)</td>
</tr>
<tr>
<td>Implicit</td>
<td>0.33 (0.76)</td>
<td>0.00 (0.00)</td>
</tr>
<tr>
<td><strong>Experiencer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>0.48 (0.80)</td>
<td>0.16 (0.40)</td>
</tr>
<tr>
<td>Other</td>
<td>0.37 (0.68)</td>
<td>0.10 (0.31)</td>
</tr>
</tbody>
</table>
Figure Caption

*Figure 1.* Mean number of emotion terms produced per memory, as a function of childhood abuse exposure and cue type.
No Childhood Abuse Exposure ■ Childhood Abuse Exposure

# Emotion Terms/Cue

<table>
<thead>
<tr>
<th></th>
<th>Positive Cues</th>
<th>Negative Cues</th>
<th>Neutral Cues</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Childhood Abuse</td>
<td>0.30</td>
<td>0.90</td>
<td>0.30</td>
</tr>
<tr>
<td>Childhood Abuse Exposure</td>
<td>0.40</td>
<td>0.20</td>
<td>0.20</td>
</tr>
</tbody>
</table>