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Trauma and Dissociation in Delinquent Adolescents  
[Articles]

CARRION, VICTOR G. M.D.; STEINER, HANS M.D.

From the Division of Child Psychiatry and Child Development, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA. Accepted September 14, 1999.

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ABSTRACT

**Objectives:** To assess history of trauma and dissociation in a group of juvenile delinquents and to assess how adolescents would respond to a structured interview for dissociative symptoms.

**Method:** Sixty-four adolescents in juvenile probation hall participated in 2 investigational sessions in 1996–1997. For session 1 they answered the Childhood Trauma Questionnaire (CTQ), the Response Evaluation Measure for Youth-71 (REMY-71), and the Weinberger Adjustment Inventory. For session 2 they were given the Childhood Trauma Interview (CTI) and the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D).

**Results:** In this sample 28.3% met criteria for a dissociative disorder and 96.8% endorsed a history of traumatic events. There were significant positive correlations between CTI and CTQ trauma scores and SCID-D and REMY-71 dissociative symptoms. All dissociative symptoms were endorsed, but depersonalization was the most common experience. There was a lack of congruence between the different methods of assessing dissociation.

**Conclusions:** This study provides support for an early link between history of trauma and dissociation. Adolescents were able to answer questions from a structured interview assessing dissociation.

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Child maltreatment is a major health problem in the United States, with more than 1 million cases of child abuse documented in 1994 (U.S. Department of Health and Human Services, 1996). It is well established that exposure to trauma can enhance an individual's long-term vulnerability to psychiatry morbidity. Besides being linked to the development of posttraumatic stress disorder (PTSD), developmental, physical, and psychological trauma is reported at a significantly high rate in adult patients suffering

from major depression, panic disorder, dissociative identity disorder, and borderline personality disorder. At a subsyndromic level, several studies have found a correlation between history and severity of child abuse and the tendency of adults to have dissociative experiences (Roesler, 1994; Zlotnick et al., 1994).

This study investigated through a multitrait, multimethod design the prevalence of dissociation in a highly traumatized sample. It further examined the association between trauma and dissociation. Research on juvenile delinquents has identified a high prevalence of PTSD in this population (Cauffman et al., 1998; Steiner et al., 1997). In addition, in a previous study of delinquent males, we showed that positive PTSD status was linked to significantly higher levels of the defense of dissociation (Steiner et al., 1997).

Elucidating the sequelae of trauma, and more specifically of the different types of child abuse, may provide information that could lead to more directed treatment and preventive interventions. The adult psychiatry literature suggests that specific types of abuse may be linked to specific symptoms in later life, such as sexual abuse and dissociation (Chu and Dill, 1990).

Dissociation can be described as the isolation of experience, memory, or mental content from conscious awareness (Spiegel and Cardena, 1990). It has been described as an autohypnotic disorder, a skill, an altered state of consciousness, a neurobiological phenomenon, and a means of resolving psychological conflict (Putnam, 1989). It manifests itself in a spectrum of severity ranging from isolated symptom to manifest syndrome (Putnam et al., 1996).

Although at times dissociation is effective in reducing the pain and distress of an overwhelming experience, this may occur at a cost. Dissociation is linked with a variety of disorders including PTSD, dissociative disorders, and personality disorders. Dissociation also appears to be common in individuals who engage in self-injurious behaviors (van der Kolk et al., 1991). The identification of dissociative phenomena in children and adolescents with a history of abuse could lead to interventions that attempt to forestall full disorders.

Currently there is a vacuum in the literature exploring history of child trauma and development of dissociative symptoms in children and adolescents (see Putnam and Trickett, 1977, for one exception). The study of underage samples is a necessary next step to improve on our existing understanding of the developmental links between trauma and dissociation. Studies of adults can only provide interesting leads, but by their very nature are retrospective and thus limited in clearing up some controversies in the literature. For example, it is not clear what role dissociation plays in the pathogenesis of self-injurious behaviors or retraumatization. While some authors argue dissociation may be a risk factor for these maladaptive behaviors, other authors conceptualize dissociation as a concurrent marker or a result of these behaviors.

One reason studies of youths have been limited is the lack of age-appropriate

measures. This situation has recently improved. However, these instruments need further application when assessing the link between child trauma and dissociation (Putnam et al., 1993; Steinberg, 1996).

The population of juvenile delinquents presents an added challenge. The prevalence of substance abuse in this population makes etiological links difficult. Individuals with symptoms of dissociation may experience these as a consequence of their history of substance abuse. The use of the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D) addresses this problem in the adult population, and case reports have demonstrated its utility with adolescents (Steinberg and Steinberg, 1995), yet this interview needs more extensive application to the adolescent population.

We wanted to improve on previous studies in the following ways: (1) we wanted to study a population known for their high prevalence of trauma; (2) we wanted to expand the age range of subjects studied into the underage group, while still anchoring the assessment in the extant adult literature; (3) we wanted to study the link between trauma and dissociation on a trait and syndromal level, hoping to clear up some of the conflicting findings which might be generated by these different methods of conceptualizing the disturbances; and (4) we wanted to contrast self-report and observer report to obtain complementary information of these complex phenomena. We hypothesized that (1) dissociation can be assessed in adolescents by means of a structured interview; (2) dissociation will be more prevalent among the most traumatized adolescents; and (3) when different types of abuse are studied, sexual abuse will have the strongest link to dissociation.

## METHOD

### SUBJECTS

Sixty-five subjects were recruited from the San Mateo County Juvenile Probation Department in California; 64 agreed to participate. Inclusion criteria included being between the ages of 11 and 16 years and participation or detention at the juvenile probation hall long enough to allow us at least 3 consecutive visits. **Fifty-seven subjects (29 males and 28 females) were detained at the juvenile probation hall** under court supervision and in secure custody, and 7 (3 males and 4 females) were under court supervision but not in secure custody. This latter group was attending a weekend community service program as part of their sentence. Exclusion criteria included history of clinically significant head trauma, epilepsy or other documented neurological disorder, history of current alcohol or substance dependence, and current use of medications. Adolescents who were psychotic, suicidal, or homicidal were also excluded from this study.

Fifty percent (32) of the subjects were male and 50% (32) were female; 39.1% were Hispanic, 21.9% were African-American, 18.8% were white, 14.1% were multiracial, and 1.6% were Asian-American. All subjects were between 11 and 16 years of age (mean = 14.4).

Parental education was used to assess socioeconomic status. The mode for the

highest level of education completed by mother indicated attending high school but not graduating. The mode for fathers indicated that the subject was not sure of the father's education. This was a representative sample of this county's youth population on probation.

## PROCEDURE AND INSTRUMENTS

After approval from our human subjects committee and informed consent from the court for their wards' participation, consent was obtained from the adolescents. Parents were notified of their child's participation via parental advisement and given the opportunity to object to their participation. Only one individual was removed from the study because of lack of parental agreement. The adolescents then participated in 2 sessions of 1 to 2 hours' duration, each of which ended with a debriefing session.

### Session 1: Three Questionnaires + Intake Data

**Response Evaluation Measure for Youth-71.** The Response Evaluation Measure for Youth-71 (REMY-71) is a 71-item self-report questionnaire (Araujo et al., 1999) which measures 21 classic defense mechanisms. The instrument shows good to excellent psychometric properties. The defense of dissociation is measured by 3 items in this questionnaire. This instrument is related to the conceptually related modification of Bond's Defense Style Questionnaire, which has been shown to have stability and discriminant, congruent, and predictive validity (Feldman et al., 1996; Steiner and Feldman, 1995).

**Weinberger Adjustment Inventory.** This is an 84-item self-report questionnaire that rates subjects along dimensions of distress, restraint, denial, and repressive defensiveness (Weinberger and Schwartz, 1990), constructs related to the "Big Five" of personality theory (McCrae and Costa, 1990). This instrument has been standardized for adolescents and shows good to excellent psychometric properties (Weinberger, 1997). Our group has shown the instrument to have discriminant (Steiner and Feldman, 1995), congruent, and predictive (Cauffman et al., 1998; Steiner et al., in press) validity in populations of juvenile delinquents.

**Childhood Trauma Questionnaire.** The Childhood Trauma Questionnaire (CTQ) is a 53-item self-report questionnaire that assesses 5 types of abuse (physical, emotional, and sexual abuse; emotional and physical neglect) with high internal consistency and good test-retest reliability (Bernstein et al., 1994). The convergent and discriminant validity of this instrument have been demonstrated in adolescent samples (Bernstein et al., 1997).

**Intake Data.** This sheet consisted of general demographics such as age, gender, ethnicity, and socioeconomic status (measured by reported level of parental education). This data sheet also gathered screening information and questions that assessed substance use, abuse, and dependence based on the DSM-IV criteria.

### Session 2: Semistructured Interviews

**Childhood Trauma Interview.** The Childhood Trauma Interview (CTI) is a

comprehensive interview that assesses interpersonal trauma; it has factors that are analogous to the CTQ, but in addition it also includes history of separation and loss and witnessing violence. In adult populations it has demonstrated good validity and interrater reliability (Fink et al., 1995). Individual scores for each type of trauma are obtained by multiplying the highest severity &#215; the highest frequency &#215; the highest duration from the narrated episodes.

Structured Clinical Interview for DSM-IV Dissociative Disorders. The SCID-D assesses the nature and severity of 5 dissociative symptoms (amnesia, depersonalization, derealization, identity confusion, and identity alteration). It has good to excellent reliability and discriminant validity (Steinberg, 1996). It is considered the "gold standard" measure for assessing dissociative disorders. In addition, adolescent case studies have been published, documenting its use in this population (Steinberg and Steinberg, 1995). The SCID-D was administered, scored, and interpreted according to the guidelines described in the interviewer's guide to the SCID-D (Steinberg, 1994). The SCID-D score was the defining variable for dissociation.

## STATISTICAL ANALYSES

We used the SAS statistical software for the analyses of the means, standard deviations, and test of our hypotheses. Spearman correlations were used to assess the correlations between trauma and dissociative scores, between dissociative measures, and between trauma measures. Analyses of variance (ANOVAs) were used as measures of dispersity.

## RESULTS

### Dissociation in Juvenile Delinquents: SCID-D

The mean SCID-D score was 8.7 (SD = 3.7), the range was 5 (no symptoms) to 20 (severe symptoms). We divided the sample into 3 groups based on the SCID-D scores. First, we grouped those with no dissociative symptoms (according to the SCID-D, these are individuals who scored 5 or less). Second, we divided the remaining scores taking into account (a) severity and (b) group size. These categories are presented in Figure 1. Group 1 were individuals who scored 5, indicating no dissociative symptoms. Group 2 were individuals who scored 6 to 9, indicating mild to moderate dissociative symptoms. Group 3 was considered the most severely affected, with scores that ranged from 10 to 20. A total of 28.3% (17/60) met criteria for a dissociative disorder, and 20% (12/60) received the diagnosis of dissociative disorder, not otherwise specified (NOS). One subject received the diagnosis of depersonalization disorder, and results for 4 others were inconclusive. Ten percent endorsed moderate (n = 3) and severe (n = 3) identity confusion symptoms, 20% endorsed moderate (n = 7) and severe (n = 5) derealization symptoms, 28.3% endorsed moderate (n = 14) and severe (n = 3) identity alteration symptoms, 30% endorsed moderate (n = 12) and severe (n = 6) amnesia symptoms, and 33.3% endorsed moderate (n = 12) and severe (n = 8) depersonalization symptoms.

Graphic Available

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Fig. 1 Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D) scores of adolescents on probation.

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ANOVA was used to test the association between gender and dissociation score (SCID-D score). There were no significant findings when sexual abuse score (obtained from the CTI) was used as a covariate ( $p = .6320$ ) or when the interaction between gender and sexual abuse score was examined ( $p = .5046$ ). For dissociation, males had a mean score of 8.89 (SD = 4.16) and females had a mean score of 8.57 (SD = 3.24). For sexual abuse, males had a mean score of 2.32 (SD = 8.99) and females had a mean score of 5.32 (SD = 14.6).

#### Dissociation Measured as a Defense by the REMY-71

The mean REMY-71 dissociation score was 4.82 (SD = 2.0) (age-matched norm 3.84, SD = 1.6). ANOVA was used to test the association between gender and self-reported dissociation. There were no significant findings when controlling for sexual abuse score ( $p = .5351$ ). For self-reported dissociation, males had a mean score of 4.66, SD = 1.8 (nonclinical male adolescents mean = 3.8, SD = 1.8) and females had a mean score of 4.97, SD = 2.1 (nonclinical female adolescents mean = 4.24, SD = 1.8). ANOVA was used to compare dissociation in a randomly selected subsample from the normative subject pool (Steiner et al., in press) and the juvenile delinquent sample. The higher dissociation score in the delinquent group was significant ( $F_{1,121} = 9.23$ ,  $p < .00$ ).

In this sample, self-reported dissociation and syndromal disturbance (SCID-D score) did not correlate significantly ( $r = .05$ ,  $p = .73$ ). Checking on group differences between SCID-D groups by ANOVA, we also did not detect significant differences ( $F_{2,58} = 1.32$ ,  $p < .50$ ) on the dissociation score obtained by using the REMY-71. We do note, however, that the means in the respective groups show differences in the expected direction (4.25 versus 4.83 versus 5.2), with the highest-scoring SCID-D group also reporting the highest dissociation scores on the REMY-71.

#### Dissociation and Trauma

The defining variable for trauma, the total trauma score, was obtained by summing individual trauma type scores from the CTI. Since this instrument has had limited use in this population, we performed an analysis of congruence on the subscales of the CTI. We found that all subscales had satisfying item to total congruence with the exception of "separation and loss" ( $r = 0.05$ ). Without "separation and loss," the Cronbach [alpha] increased from .57 to .63 when the overall congruence score for the instrument was calculated. Total trauma score (CTI) (not including "separation and loss") and SCID-D dissociation score obtained a modest but significant positive correlation ( $r = 0.28$ ,  $p = .04$ ). Table 1 shows the correlation findings between the measures of total trauma and of total dissociation. **The highest positive correlation was obtained between self-reported total trauma score (CTQ) and self-reported dissociation score (REMY-71) ( $r = 0.42$ ,  $p = .00$ ).**

Graphic Available

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TABLE 1 Spearman Correlations (and p Values) Between Trauma and Dissociation Measures  
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#### Quality of Trauma and Dissociation

Nonparametric analyses between the scores by type of trauma (dependent variable) and the degree of dissociation subgroups (none, mild to moderate, severe) (independent variable) achieved a significance level only for physical abuse ( $\chi^2 = 11.5, p = .00$ ). Spearman correlations between scores by type of trauma and dissociation scores were significant only for physical neglect ( $r = 0.33, p = .01$ ).

Self-reported dissociation in the REMY-71 was positively correlated with both self-reported physical abuse ( $r = 0.40, p = .00$ ) and self-reported physical neglect ( $r = 0.28, p = .03$ ). Table 2 shows the Spearman correlations between factors for the self-reported trauma instrument (CTQ) and the structured clinical interview (CTI).

Graphic Available

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TABLE 2 Correlations Between CTQ and CTI  
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#### Dissociation and Substance Abuse

The adolescents' subjective association between their dissociative symptoms and their substance use was reported on the SCID-D. These frequencies are presented in Table 3. For the symptoms of amnesia, identity confusion, and identity alteration, most subjects reported not knowing whether there was an association between their substance use and their symptoms. For the symptom of depersonalization, most subjects reported no association between their substance use and their symptom.

Graphic Available

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TABLE 3 Percentage of Sample Reporting Subjective Association Between Symptoms of Dissociation and Substance Abuse on the SCID-D  
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#### DISCUSSION

This is the first study to look at dissociation with the SCID-D among juvenile delinquents. Furthermore, it is the first study of its size to use this instrument with any adolescents. This study found that dissociation can be assessed in adolescents with the use of a self-report measure and a structured interview, although as we discussed below we may be assessing more than one phenomenon. We found that dissociation measured either as a syndromal disturbance or a defense is common among juvenile delinquents on probation. There was a modest correlation between trauma and dissociation. The data support a link between dissociation and a history of physical abuse and physical neglect. Furthermore, our subjects provide support for the idea that the link between history of trauma and depersonalization may occur independently of a history of substance use. We need independent and prospective assessment, though, to firmly support this conclusion.



As expected, we found no differences in dissociative scores of males versus female juvenile delinquents. When assessing different types of abuse, our data did not support the specific link between sexual abuse and dissociation. Unexpectedly, our 2 measures of dissociation did not demonstrate congruence. Similar divergences of observer and self-report measures have been reported in a variety of domains of psychopathology. We may need larger and more diverse samples to test expected associations.

### Limitations

This pilot study has a number of limitations. First, the sample was small. When subgroups were categorized by their levels of dissociation, the groups were too small for adequate final comparisons. Second, with the exception of 2 subjects, all subjects in the sample reported a history of trauma. This created a "ceiling effect," requiring a bigger effect size in an already small original sample. Third, the cross-sectional nature of this study does not allow for any etiological links between dissociation and history of trauma. Longitudinal studies are needed to elucidate the role of trauma in symptomatology.

On the other hand, this pilot study has a number of strengths. First, it explores an important symptom in a population at risk. Second, by using a multitrait, multimethod approach, it emphasizes the need to assess symptoms with a broad and diverse design.

There was a lack of congruence between 2 of our instruments assessing dissociation. This finding is consistent with the idea suggested by some investigators that dissociation may not exist on a continuum model, but in fact may exist as distinctive types (Putnam et al., 1996). The Remy-71 is an instrument developed to assess normal developmental defensive processes while the SCID-D assesses the pathological realm of dissociation. Our nomenclature may be limited, and we may be identifying 2 different human responses to trauma. Alternatively, this incongruence between our measures may reflect the differences among self- and observer-rated instruments. Our results indicate that juvenile delinquents may be more willing to self-disclose through self-administered questionnaires than through clinical interviews conducted outside of a therapeutic relationship. Furthermore, the lack of congruence between our dissociation measures may result from the small sample size and the high dissociation rates, once again creating a "ceiling effect" on our sample that may augment small differences between them.

### Clinical Implications

Dissociation in Juvenile Delinquents. The high prevalence of dissociative symptoms, as assessed by the SCID-D in this study, has important diagnostic and treatment implications. Children and adolescents may present these symptoms prior to meeting full criteria for syndromes such as PTSD, panic disorder, personality disorders, or dissociative disorders. The early identification of this symptom may help identify a

group of children who could benefit from early intervention. Treatment interventions that are to be effective need to take into consideration the nature of this symptom, as the subject may not have constant connectedness to the therapeutic process at all times.

**The most common diagnosis based on SCID-D was dissociative disorder, NOS. As** presented above, this may indicate a critical time for intervention before full development of a syndrome. A contrasting view to this idea is that most adults evaluated with the SCID-D also receive an NOS diagnosis, until later treatment clarifies the syndrome (personal communication with Marlene Steinberg, M.D., 1998). Both factors probably play a role; however, they both underscore the importance of assessing and treating dissociative symptoms in adolescents. Although identity confusion may seem to be a symptom of low face validity when using this instrument with adolescents, this was the least endorsed symptom by these adolescents.

Substance abuse was common in this population. Although substance use could lead to many of the experiences characterized as dissociation, a significant proportion of those who experienced these symptoms and felt they could judge the association of their use and their symptoms reported no association between these factors. In fact, many of the subjects said they were currently experiencing the symptoms while they were in detention and not using substances. The associations between substance use and dissociation, as well as the potential chronic effect of substance abuse on dissociative symptoms, requires longitudinal investigation.

Trauma and Dissociation. Our data demonstrate that both trauma and dissociation occur with high prevalence in youths on probation. The low to modest positive correlations between trauma and dissociation suggest that if dissociative symptomatology is an effect of experienced trauma, this must begin by early adolescence. These findings are consistent with another cross-sectional study of clinical adolescents that reported positive correlations between abuse or stress experienced earlier in life and self-reported dissociation (Sanders and Giolas, 1991).

**With the exception of 2 subjects, all subjects endorsed some type of experienced trauma.** This may limit the magnitude of the results by causing a "ceiling effect." However, even with this limitation and the clinically suggested underestimation of some specific types of trauma, there was still a significant correlation between trauma and dissociation. This correlation was higher, with the self-report dissociation instrument indicating that trauma is perhaps more closely linked to dissociation as a defense or a personality trait, rather than a syndrome.

Quality of Trauma and Dissociation. The results support a significant association between dissociation and a history of physical abuse and neglect and failed to find this association with a history of sexual abuse. In our research and clinical experience with this adolescent population, we find that the more invasive the type of trauma, the more difficult it is for individuals to disclose it. Most of the adolescents with a history of sexual abuse tend to disclose it while in a therapeutic environment. This clinical fact speaks to

the need for longitudinal investigations among traumatized populations. We propose that the objectivity of observer-rated instruments such as structured interviews can be maximized in longitudinal designs. On the other hand, self-report instruments, presumably because of more ease of disclosure, may offer greater sensitivity in more limited designs.

## Conclusions

This study supports the idea that dissociation can be assessed in adolescents and that the assessment can be done with the use of a structured interview. We suggest that structured interviews may facilitate disclosure if administered within the confines of a therapeutic relationship. Our findings on objective and subjective dissociation measures not being congruent may suggest that (1) we may be examining 2 entirely different and unrelated entities (a defense process or a pathological symptom) and referring to them with the same nomenclature; or (2) the symptom defensive and syndromic of dissociation does occur on a continuum, but it manifests in a bimodal distribution which is differentially captured by objective and subjective measures; or (3) there is a methodological problem assessing dissociation, i.e., this lack on congruence may indicate differences between self-report and observer-rated measures. Our results suggest that different types of trauma may need to be investigated with different methodological approaches. This pilot study stresses the importance of a multitrait, multimethod design. Subjects' self-reports and clinical evaluations provide the opportunity to assess history and sequelae of trauma by different observations. Having identified the phenomenon of dissociation in this population, our next step should be to evaluate its development with the use of longitudinal designs that also incorporate a contrasting group. This contrast will provide much-needed information about the genesis of the links between trauma and dissociation and its various manifestations.

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