

CHILDHOOD STRESS AND DISSOCIATION IN A COLLEGE POPULATION

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ABSTRACT

Two studies are reported demonstrating that individual differences in dissociation in college students are positively related to differences in self-reported stressful or traumatic experiences in youth. In Study I differences in the degree of stress or unpredictable physical violence experienced in childhood or early adolescence were shown to be related to scores on the Dissociative Experiences Scale (DES). Study II replicated these relationships and extended them to another dissociation measure, the Bliss scale. Study II also demonstrated that both dissociation measures correlate positively with reported physical and psychological abuse. These findings for a nonclinical population are discussed in relation to the etiology of dissociation in clinical groups.

INTRODUCTION

In recent years there has been a renaissance of interest in dissociation. The current diagnostic manual of the American Psychiatric Association, DSM-III-R (1987), recognizes five categories of dissociative disorders: Psychogenic amnesia, psychogenic fugue, depersonalization disorder, multiple personality disorder (MPD), and dissociative disorder not otherwise specified. In addition to these conditions, dissociation is believed to play a role in other psychiatric disorders such as post traumatic stress disorder (PTSD) (Kluft, Steinberg, & Spitzer, 1988; Spiegel, Hunt, & Dondershine, 1988; Bliss, 1983), and eating disorders (Sanders, 1986; Pettinati, Horne, & Staats, 1985). Although it is clear that some degree of dissociation also occurs in nonclinical populations, far less is known about dissociation in everyday life than in psychopathology.

A direct comparison of dissociation in clinical and non-clinical groups was made by Bernstein and Putnam (1986) who developed a quantitative measure of dissociation, the Dissociative Experiences Scale (DES), based on dissociative

experiences reported by psychiatric patients meeting DSM-III (American Psychiatric Association, 1980) criteria for a dissociative disorder. This 28-item instrument provides an index of the frequency of a number of types of dissociative experiences, including disturbances in identity, memory, awareness, and cognition, as well as feelings of depersonalization. Some items are: driving a car and suddenly realizing that you don't remember what has happened during all or part of the trip; finding yourself in a new place and having no idea of how you got there; finding new things among your belongings that you do not remember buying; looking in a mirror and not recognizing yourself. To establish reliability and validity of the scale, Bernstein and Putnam (1986) administered the DES to 34 normal adults (ages not specified), 31 normal college students, and selected psychiatric groups. The scale proved to be internally consistent and to produce scores that were relatively stable over time: test-retest reliability for 12 adults and 14 college students who were retested after 4-8 weeks was .84. As expected, patients with MPD scored considerably higher than any other group (MPD was the only dissociative disorder included in the study). Normal adults obtained the lowest scores and did not differ significantly from alcoholics. The college students scored somewhat higher than the adults and exhibited more variability; their scores did not differ significantly from schizophrenics, indicating that the DES is not simply reflecting general psychopathology.

Bernstein and Putnam's findings indicate that individual differences in dissociation exist in the normal population, particularly among college-aged students; moreover, they suggest that the dissociation in normals is continuous with the dissociation exhibited in psychopathology. If this is true, it may also be the case that the correlates of dissociation are the same in normal as in clinical populations.

One of the most reliable antecedents of dissociation in clinical populations is trauma. This is clear in PTSD as well as in the dissociative disorders where it is particularly striking in cases of MPD. In a study of 20 MPD patients, Coons and Milstein (1986) found a 75 percent incidence of sexual abuse and a 55 percent incidence of physical abuse during childhood. Comparable or even higher statistics have been reported by others. In Putnam's series of 100 MPD patients (Putnam, Guröf, Silberman, Barban, & Post, 1986), there was an 83 percent incidence of sexual abuse, a 75 percent incidence of physical abuse, a 61 percent incidence of extreme neglect or abandonment, and a 41 percent incidence of witnessing extreme violence. One might hypothesize that a high degree of dissociation in normals is also

associated with with abuse, neglect, or other forms of trauma. One might further speculate that levels of stress less severe than those experienced by MPD patients might nevertheless result in elevated but not necessarily pathological levels of dissociation. The present study addressed these possibilities by examining the relation between individual differences in dissociation in normal young adults and self-reported stressful or traumatic experiences in childhood.

The subjects of this investigation were college students. More than 300 undergraduates in each of two studies completed the DES, thereby providing normative data on a much larger sample than was surveyed by Bernstein and Putnam (1986). Another dissociation scale, the Bliss (Wogan, 1988), was included in the second study for purposes of comparison with the DES. Students in both studies were given a Childhood Stress Inventory of our own devising. In Study I this inventory was deliberately very brief, general,

and noninvasive. Encouraged by positive correlations between responses to this inventory and the DES scores, we formulated a more specific Childhood Stress Inventory for the second study, including questions about physical, sexual, and psychological abuse.

STUDY I

Method

Subjects. Subjects were 309 college undergraduates, 222 women and 87 men enrolled in a large introductory psychology class at the University of Connecticut. They ranged in age from 17 to 22 (the few students in the class who were older than 22 were not included in the study).

The students wrote their name, Social Security number, age, and sex on a cover sheet, and completed the Childhood Stress Inventory and the DES in that order.

Childhood Stress Inventory. The students were asked to circle "not at all," "somewhat," or "very much" in response to each of the following four questions: 1) As a child, to what extent did you feel that your home was charged with the possibility of unpredictable physical violence? 2) As a young adolescent, to what extent did you feel that your home was charged with the possibility of unpredictable physical violence? 3) Overall, how stressful was your childhood? 4) Overall, how stressful was your early adolescence?

DES. Respondents were asked to indicate how frequently they have had each of 28 life experiences when not under the influence of drugs or alcohol. This was done by making a slash on a 100 mm line labelled 0 percent to 100 percent (of the time). Scores for each item were determined by measuring the slash mark to the nearest 5mm from the left-hand end of the line. The DES score is an average of the 28 item scores. We chose to study the mean score, but have included the median as well, as used by Bernstein and Putnam (1986).

FIGURE 1
Frequency distribution of DES scores.

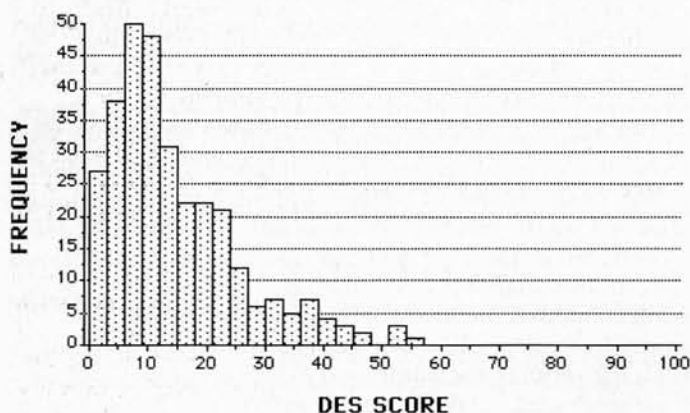


FIGURE 2
Mean DES scores of subjects as a function of their reports of unpredictable physical violence in childhood and early adolescence.

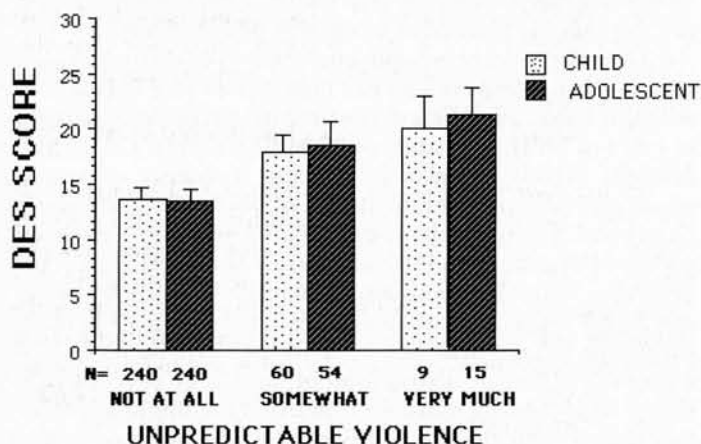
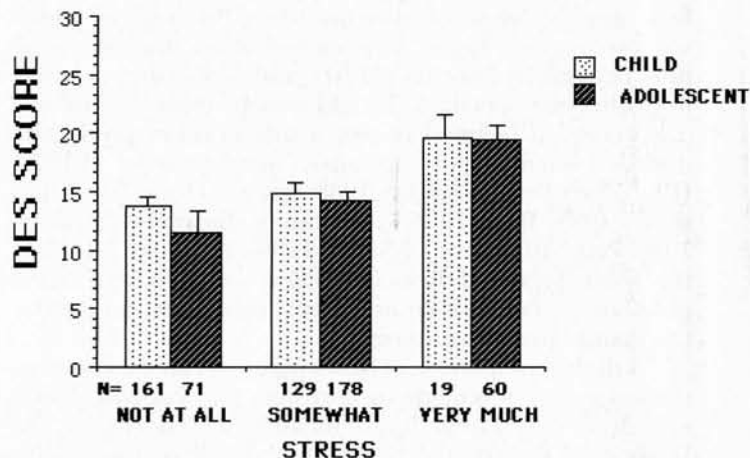


FIGURE 3
Mean DES scores of subjects as a function of their reports of stress in childhood and early adolescence.



Results

The distribution of DES scores (shown in Figure 1) was positively skewed with a mean of 14.6 (s.d. = 11.0) and a median of 11.2. The scores of the women students (mean = 14.2, s.d. = 10.8, median = 10.7) did not differ significantly from those of the men (mean = 15.7, s.d. = 11.2, median = 13.0).

Clear relationships were found between responses to the Childhood Stress Inventory and scores on the DES (see Figures 2 and 3). Both the amount of unpredictable physical violence reported (questions 1 and 2, Figure 2) and the amount of stress reported (questions 3 and 4, Figure 3) were positively related to the DES scores. Analyses of variance comparing the DES scores in the three response categories for each of the four Childhood Stress questions demonstrated significant differences for question 1 (violence as a child, $F(2, 306) = 5.3, p < .006$), question 2 (violence as an adolescent, $F(2, 306) = 8.16, p < .001$), and question 4 (stress as an adolescent, $F(2, 306) = 9.18, p < .001$); the results for question 3 approached statistical significance (stress as a child, $F(2, 306) = 2.57, p = .08$). In view of the skewness of the distribution the analysis of variance results were confirmed by nonparametric tests which produced statistically significant effects for all four questions.

Possible sex differences in responding to the Childhood Stress Inventory were examined using chi square analyses. A statistically significant difference was found for question 3 (stress in childhood): women were more likely than men to use the mildest category ("not at all"), while men were more likely than women to use the moderate category ("some-what") ($X^2 = 8.4, df = 2, p = .02$). There were no sex differences in response to the other questions.

Discussion

The skewed DES distribution in our study corresponds closely to that reported by Bernstein and Putnam (1986) for their small sample of college students; the median of their distribution, though, was slightly higher than ours (14.1 versus 11.2). Like Bernstein and Putnam we found substantial variability in the DES scores of college students with a significant minority achieving scores that overlapped with those in high-dissociation clinical groups. In Bernstein and Putnam's study the median DES score of the MPD patients was 57, a value near the extreme end of the high-scoring tail of the college distribution, and the median DES score of the PTSD patients was 31.25, a score exceeded by 13 percent of the college students in their study and by 8 percent of the students in our study. The DES data demonstrate that degrees of dissociation may be distinguished in the normal population. Support for the idea that dissociation in normals is continuous with pathological dissociation is provided by our finding that in college students as in psychiatric groups, dissociation is related to reports of early stress or unpredictable physical violence.

STUDY II

Our second study was undertaken to obtain information about the types of stressful experiences that are related to

dissociation in college students. Specifically, we wished to know whether these are similar in nature (if perhaps not in duration and severity) to the traumatic events reported by MPD patients: i.e., sexual abuse, physical abuse, witnessing abuse, etc. For this purpose, the Childhood Stress Inventory was expanded to include questions about these areas and, because of the personal nature of the material requested, students were surveyed anonymously. A second purpose of Study II was to establish the generality of the relation between stress and dissociation by determining whether this relation was also found with another measure of dissociation, the Bliss scale. The Bliss dissociation scale was developed by Wogan (1988) who based the items on characteristics of MPD patients as described principally by Eugene Bliss (Bliss, 1986). The scale is thus similar to the DES in using a dissociative disorder as the conceptual endpoint, but quite different in response demands and in the specific content of the items.

Method

Subjects. The subjects in this study were 220 women and 117 men, 17 to 22 years of age (students older than 22 were not included). The students were from several introductory psychology classes at the University of Connecticut and participated in this study anonymously as part of a research participation requirement of the psychology course.

All subjects completed the Childhood Stress Inventory and the DES; 270 of the subjects (180 women and 90 men) also completed the Bliss Dissociation Scale. (Because of time considerations the Bliss scale could not be included in all testing sessions.)

Childhood Stress Inventory. This inventory included two of the four questions used in the previous study: unpredictable violence as a child and stress as a child. In addition, information was solicited about physical abuse, sexual abuse, and psychological abuse. Students were asked whether they had ever been locked in a closet, beaten with an object, or sexually abused; these events were arrayed along with less traumatic ones such as spanking. Students were also queried about the following general categories of experience: physical abuse, verbal abuse, witnessing the abuse of a family member, feeling unwanted or neglected, and being left alone. Respondents were encouraged to answer all of the questions, but if they felt they could not do this, to skip any question(s) they did not wish to answer and mark the Inventory "incomplete." Five students who indicated that the information they provided was not complete were not included in the study.

DES. The DES was administered and scored as in the previous study.

Bliss dissociation scale. The Bliss consists of 40 items which the respondent is asked to answer using a 5-point scale in which 1 = strongly disagree and 5 = strongly agree. Sample items are: "I feel as though I have always been able to hypnotize myself"; "Sometimes I become quite happy without being able to explain why"; and "I have had times when I blacked out." Two of the items are reversed before scoring (i.e., 5 = 1, etc.); all other items are scored positively. Higher scores indicate a greater degree of dissociation.

Results

The frequency distribution of the DES scores was very similar to that found in Study I: it was positively skewed with a mean of 14.9 (s.d. = 11.7) and a median of 11.6. The highest score was 62.3 and the lowest was .4. As in the previous study, there was no significant sex difference.

The distribution of Bliss scores was symmetrical with a mean of 91.9 (s.d. = 22.5) and a median of 92.0. Scores ranged from 45 to 150, with a single outlying score of 177. The scores of the women students (mean = 91.7, s.d. = 22.9) did not differ significantly from those of the men (mean = 92.1, s.d. = 22.5). The correlation between the DES and Bliss measures was .54 ($p < .001$).

Table 1 shows the DES and Bliss scores as a function of responses to the two Childhood Stress Inventory questions used in Study I. Dissociation increased with increasing stress or unpredictable violence. This was true for both dissociation measures. The single reversal of the trend on the Bliss was not statistically significant. Analyses of variance demonstrated statistically significant differences among the three response categories for both the DES and the Bliss; in the case of the DES scores, these analyses were confirmed by nonparametric tests, in view of the skewed distribution for this measure.

There was no sex difference in this study in the report of unpredictable violence ($X^2 = .81$, $df = 2$, $p = .67$) or stress ($X^2 = 1.63$, $df = 2$, $p = .43$).

INCIDENCE OF PHYSICAL, SEXUAL, AND PSYCHOLOGICAL ABUSE

Physical abuse. Twenty-seven students (8.0%), 9 men and 18 women, reported that they had been physically abused as a child. The majority described the abuse as mild, and occur-

ring sometimes or seldom. Only three of the students described the abuse as severe, and only two reported that it happened often. No student reported frequent *and* severe abuse. Twenty-six students (7.7%) reported being beaten by a person and 26 (7.7%) being beaten with an object. There were no sex differences in the incidence, severity, or frequency of reported physical abuse, and no sex differences in the incidence of the particular forms of physical abuse.

Sexual abuse. One male student and seven females reported being sexually abused as children. The incidence of reported sexual abuse in this sample was thus 2.4%.

Psychological abuse. Sixty-six students (19.6%) reported being verbally abused (e.g., denigrated or called names); 95 (28%) reported witnessing the physical and/or verbal abuse of a family member; 75 (22%) reported feeling unwanted or neglected; 76 (22.5%) reported being left alone frequently, and four (1.1%) reported being locked in a closet. There were no differences in the proportions of men and women reporting these experiences.

ABUSE AND DISSOCIATION

In order to examine the relation between abuse and dissociation two general categories of abuse were distinguished: physical abuse and psychological abuse. Students were considered to have experienced physical abuse if they answered yes to the physical abuse questions OR if they reported any one of the following: being beaten by a person, being beaten with an object, or sexually abused. Students were considered to have experienced psychological abuse if they reported any one of the following: verbal abuse, witnessing the abuse of a family member, feeling unwanted or neglected, being left alone frequently, or being locked in a closet.

TABLE 1
Mean DES and Bliss Scores as a Function of Two Items From the Childhood Stress Inventory

Stress Inventory Item	DES score			Bliss score		
	X	s.d.	N	X	s.d.	N
<i>Unpredictable physical violence as a child</i>						
Not at all	14.2	(12.7)	254	89.4	(21.7)	203
Somewhat	18.1	(13.2)	71	100.0	(24.3)	57
Very Much	19.1	(12.6)	12	96.2	(17.7)	10
	(F(2, 334) = 3.11, $p < .05$)			(F(2, 267) = 5.32, $p < .01$)		
<i>Stress as a child</i>						
Not at all	12.5	(10.2)	15.1	84.6	(21.5)	123
Somewhat	16.2	(11.9)	150	97.4	(20.8)	114
Very Much	22.6	(21.6)	36	99.9	(24.5)	33
	(F(2, 334) = 10.28, $p < .001$)			(F(2, 267) = 13.06, $p < .001$)		

A comparison of students who had experienced physical abuse with those who had not experienced physical abuse revealed that the former had significantly higher scores on both the DES ($t = 4.8$, $df = 335$, $p < .001$) and the Bliss ($t = 2.3$, $df = 268$, $p < .03$). The same was true of psychological abuse: students who had experienced psychological abuse scored significantly higher on both dissociation measures than students who reported no psychological abuse (DES: $t = 4.3$, $df = 335$, $p < .001$; Bliss: $t = 4.6$, $df = 268$, $p < .001$).

Additional analyses demonstrated that the highest dissociation scores were found among subjects who reported both physical and psychological abuse. Three groups of students were compared: those who had experienced neither physical nor psychological abuse; those who had experienced either physical or psychological abuse, and those who had experienced both physical and psychological abuse. Analyses of variance demonstrated statistically significant relationships between these abuse categories and scores on both the DES and Bliss. These results are presented in Table 2.

A comparison of Table 2 with Table 1 reveals a striking similarity between the abuse/dissociation relationship and the stress/dissociation relationship. The numbers of subjects in the three experience categories were essentially the same for the abuse variable as for the stress variable. Moreover, the strength of the relationship between abuse and dissociation was approximately equal to that of the relationship between stress and dissociation.

To further elucidate the relation between reported abuse in childhood and dissociation, we compared the abuse histories of high dissociation subjects with that of low dissociation subjects. In this analysis students who scored at least one standard deviation above the mean on both dissociation measures were defined as high dissociators; those who scored at least one standard deviation below the mean on both measures were defined as low dissociators. There were 19 subjects in the first category and 22 in the second. Thirteen of the 19 high dissociators reported some type of childhood abuse (1 reported physical abuse, 7 reported

psychological abuse, and 5 reported both physical and psychological abuse); by contrast only 3 of the 22 low dissociators reported some type of abuse (in all cases the abuse was psychological). A chi square analysis demonstrated a significant difference in abuse between high and low dissociators, ($X^2 = 12.86$, $df = 1$, $p < .001$).

GENERAL DISCUSSION

The present studies have shown in a normal population a relationship which has been abundantly documented in psychopathology, that between dissociation and stress. This relationship was found for two quite dissimilar measures of dissociation, and for several indices of stress: reports of stress, unpredictable violence, physical abuse and psychological abuse, as well as for a composite abuse index.

The validity of retrospective reports of childhood is always open to question, and this is particularly true when these reports concern sensitive issues such as parental mistreatment or when they are made anonymously. With respect to the second issue, it is reassuring to find such a close similarity between our two studies in the analyses based on reports of childhood stress or unpredictable physical violence, since in the first study students identified themselves, while in the second they responded anonymously. The replication of results for these two childhood questions also gives credence to the students' anonymous responses to the more specific and sensitive questions on which the abuse categorization was based. A methodological point for future studies is that the abuse categories we devised yielded essentially the same results as the categorization based on the single question: "How stressful was your childhood?" However, although the stress question gives the same results as the composite abuse index, the modest correlation between the two measures (.39) indicates that they do not classify the same people in comparable experience categories.

Dissociative experiences may occur spontaneously as adaptive responses to extreme or prolonged or inescapable

TABLE 2
Mean DES and Bliss Scores as a Function of Reported Physical and Psychological Abuse.

Abuse Category	DES score			Bliss score		
	X	s.d.	N	X	s.d.	N
No Abuse	11.9	(9.8)	158	85.1	(21.0)	126
Either Physical or Psychological Abuse	16.2	(11.7)	138	97.1	(21.8)	114
Both Physical and Psychological Abuse	22.6	(14.4)	41	100.3	(23.9)	30
	(F(2, 334) = 16.7, $p < .001$)			(F(2, 267) = 11.6, $p < .001$)		

stress. For example, a violent sexual assault may provoke a spontaneous out-of-body experience in which the victim feels herself to be floating above her own body, viewing it dispassionately from above (Serdahely, 1987). Pathological dissociation such as that found in MPD is believed to be learned through repeated traumas in which dissociation provides a means of escape from situations in which physical escape is not possible (Kluft, 1985). Our studies have shown that lesser degrees of dissociation are also associated with stressful experiences, though probably with lesser degrees of stress than those which provoke pathological dissociation. Indeed, our data indicate that even relatively low levels of abuse such as feeling neglected or being left alone frequently may produce a shift toward greater dissociation.

Although our focus in these studies was on negative experiences in childhood, our results indicate that this may not be the only developmental period in which stress may affect dissociation. In Study I we found no difference in the effects of experiences occurring in childhood and those occurring in early adolescence, although we note that the ratings for these periods were fairly highly correlated (.66 for unpredictable violence and .48 for stress). Case studies of MPD suggest not only that the traumas are severe, but also that they occur fairly early in life, almost always before puberty (Putnam et al., 1986; Bliss, 1980; Greaves, 1980). By comparison, dissociation in the normal population may be associated with trauma either mild enough or late enough not to provoke extreme dissociative episodes or interfere too drastically with the normal course of development.

A second possible dissimilarity between normal dissociation and dissociation in MPD concerns the lack of a sex difference in dissociation in the normal population. This contrasts with the quite marked sex difference in MPD: far more women than men are diagnosed with this disorder (Putnam et al., 1986; Bliss, 1980; Allison, 1974), although it has been suggested that this difference may simply be one of detection, i.e., more MPD women than men come to the attention of psychotherapists. If there is a true sex difference, we would hypothesize that this difference is produced by a sex difference in the experience of relatively severe forms of abuse, particularly of sexual abuse. With the exception of sexual abuse, we found no type of stressful experience in college students which was more common among women than among men. The only statistically significant difference in childhood experiences was that in Study I the men reported more stress in childhood than the women; however, this difference was not replicated in Study II. Thus, under conditions in which there is no reliable or substantial difference in stress, there is no sex difference in dissociation. If there is a sex difference in MPD, there are at least two possible explanations of it: either women have a greater biological predisposition than men for this extreme form of dissociation, or women are more likely than men to experience extremely severe or prolonged stress. Of these alternatives, the latter appears more likely, particularly give the greater likelihood of sexually motivated assaults against females than males (Finkelhor & Baron, 1986).

Our two studies, having demonstrated a clear and consistent correlation in a normal population between stressful

events in youth and later tendencies toward dissociation, extend significantly the population boundaries for which there is a meaningful relationship between these two classes of variables. As a result of these findings conceptual formulations treating stress/abuse and dissociation may now include non-pathological individuals as well. Our suggestion to researchers is in fact that it is precisely in the continued study of such relatively normal populations that important contributions can be made concerning the etiology of dissociation in both clinical and nonclinical groups. ■

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