

DISSOCIATIVE
REACTIONS AND
CHARACTERISTICS OF
THE TRAUMA:
PRELIMINARY TESTS OF
A PERCEPTUAL THEORY
OF DISSOCIATION

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ABSTRACT

Ten hypotheses were derived from Beere's (in press) perception based theory of dissociation. Seven hypotheses received significant support. Although two hypotheses obtained inconsistent support, the results are explainable by the theory. The tenth hypothesis received no support. Two post hoc hypotheses pertinent to the tenth hypothesis and based on the theory received strong support, however, indicating that the last hypothesis was a misapplication of the theory. The results indicate, as predicted by the theory, that during trauma perception of the background (defined as "I," mind, body, world, and time) is lost or altered and becomes the dissociative reaction. In addition, the results indicate that specific dissociative reactions are unique to specific traumatic conditions. In contrast to current opinion, some dissociative reactions during trauma do not seem defensive but result from perceptual focus on the traumatic threat.

Beere (1991a, 1991b, 1995, in press) presented a perception-based theory of dissociation and hypothesized that specific dissociative reactions (depersonalization, derealization, disembodiment, and detemporalization) would be associated with particular characteristics of the traumatic situation. This theory is a preliminary attempt to develop a comprehensive theory of dissociation, a theory which is currently unavailable (Putnam, 1989; Ross, 1989). In addition, the current theory extends Fine's (1988) conceptualization that the cognitions evidenced by MPDs are tied to an underlying dysfunctional perceptual organization.

Based on the work and the approach of phenomenological philosophers, most notably Merleau-Ponty (1962), Beere defined the "perceptual background," consisting of the "I," mind, body, world, and time, as the experiential context for all perceptual experience and hypothesized that specific dissociative symptoms originate from the loss of or change in the perceptual background. The perceptual background, which establishes and reveals the contextual meaning for

TABLE 1
Relationship Between Loss of or Change in the
Perceptual Background and Dissociative Diagnosis

Component of the Background	Dissociative Disorder
"I"	Fugue; Dissociative Identity Disorder
Mind	Amnesia; Depersonalization
Body	Depersonalization
World	Derealization
Time	Changes in time experience; time loss

experience, is always present during non-dissociated, everyday experience.

The background maps one to one with the major symptoms of dissociation (Table 1): experiencing *time* loss, slowing or quickening; perceiving the *world* as unreal or dream-like; perceiving one's *body* as unreal, not mine or changing size; experiencing one's *mind* as changed or unreal; and experiencing one's *self* as losing will, continuity, or identity.

Beere posited that the psychological mechanism which leads to perceptual loss of or change in the background during trauma was a focused perception on what was frightening. The rationale for the hypotheses tested in the current research is quite simple: the source of threat will engage perception, shifting it away from non-threatening, background components which then are experienced as the dissociative reactions. In addition, he hypothesized that dissociative reactions were of different psychological complexity and, this more complex and demanding reactions required more extreme and frightening trauma to elicit them. In other words, some background components are more readily ignored or altered than others. The original and preliminary formulation is presented in Table 2. This formulation attempts to

TABLE 2
Hypothetical Characteristics of External Precipitants Evoking Specific Dissociative Reactions

Complexity/ Demand	Dissociative Reaction or Symptomatology	"Internal" State	"External" Precipitant
Most	Alter self: MPD or fugue	Loss of "I": Self as actor or intender	1. Forced, horrific acts 2. Horrific intentions
	Depersonalization	Loss of mind: Self as experiencer of self	1. Unacceptable emotions, thoughts or sensations evoked by trauma or the situation 2. World threat
Moderate	Disembodiment	Loss of body	1. Before bodily injury 2. Immobilization 3. Massive external threat
	Derealization	Loss of world	1. Perception to the mind or body-pain 2. Perception of a startling trauma
Least	Detemporalization	1. Time stop 2. Time slow 3. Time speed up 4. Time loss	1. Sudden, intense trauma 2. Trauma extends over time; anticipation of trauma 3. Non-specific, non-startling threat 4. Determinants unclear

explain dissociative reactions which occur in the initial and immediate confrontation with a trauma. If the trauma extends over time, then the determinants become more confused, and the model does not necessarily hold.

The present research tested hypotheses which follow from this theory. There were three general hypotheses.

Hypothesis 1: A narrowing or restricting of perception would be associated with dissociative reactions.

Hypothesis 2: Different kinds of trauma would produce different dissociative reactions.

Hypothesis 3: Psychologically simple and less psychologically demanding dissociative reactions would occur more frequently than more complex and psychologically demanding reactions. (See Table 2.)

Seven specific relationships between dissociative reactions and traumatic event derived from the theory.

Hypothesis 4: Time slowing pertains to anticipation of trauma opposed to its being sudden.

Hypothesis 5: Time stopping would pertain to startling trauma.

Hypothesis 6: Depersonalization pertains to unacceptable thoughts or emotions.

Hypothesis 7: Depersonalization would pertain to anticipated trauma.

Hypothesis 8: Derealization would pertain to startling trauma.

Hypothesis 9: Disembodiment pertains to anticipated bodily injury, and not actual bodily injury.

Hypothesis 10: Derealization would pertain to the experience of bodily pain.

METHOD

A self-report instrument was administered (attached as Appendix A). It first defined a trauma with an excerpt from the *DSM-III-R* (1987), and then asked subjects to indicate whether they had been traumatized and how many times, asked for report of presence or absence of specific dissociative reactions (while not under the influence of drugs or alcohol), during trauma (e.g., time slowing, objects appearing far away, changes in body size, or feeling as if in a dream), and then asked questions about the experience of the trauma itself. In addition, subjects indicated whether they experienced the same list of dissociative reactions when they were not in a traumatic situation. The DES (Bernstein & Putnam, 1986), a 28-item self-report instrument which measures dissociation, was administered. Extensive research has been done (see Carlson, 1994) which demonstrates the reliability and validity of the instrument: reported split-half reliabilities range from .83 to .93 with Chronbach's alpha equal to .95; accurate screening of Dissociative Identity Disorder (DID) with the DES has been validated (Steinberg, Rounsaville, & Cicchetti, 1991; Carlson, Putnam, Ross, Torem, Coons, Dill, Loewenstein, & Braun, 1993).

RESULTS

Overview

Two-hundred and ninety college students at a medium-sized, midwestern, public university (109 males and 168 females, modal age=18, average age=19.3) completed the instrument. (Occasionally subjects did not answer a specific question, and consequently, subtotals do not always sum to the total number of subjects.) Thirty-one percent (n=90) reported

experiencing no trauma (T=0 group), 67 percent (n=189) reported having experienced one or more traumas (T \geq 1 group), 28.3 percent (n=82) reported experiencing a single trauma (T=1 group). Those 82 subjects were used for many of the following analyses since their data could clearly relate dissociative reactions to characteristics of a specific traumatic event. Many analyses compared the reports of dissociative reactions by the 82 subjects having experienced a single trauma with the reports of dissociative reactions of the 90 subjects who reported experiencing no trauma, who provide a baseline for frequency of non-traumatic, dissociative reaction. Given the number of hypotheses, discussion will sometimes follow the data analysis relevant to that hypothesis, and some discussion will be incorporated into the presentations of the results.

Hypothesis 1

A narrowing or restricting of perception would be associated with dissociative reactions. Two items were considered relevant to this hypothesis: "Did you ignore certain aspects of the [traumatic] situation?" and "During a trauma, were you aware of a single sensory modality (say, sight) while being totally unaware of any other sensory modality (say, sound and touch)?" The total number of dissociative reactions reported by the T=1 group were compared for answers to these questions. "Ignored aspects of the traumatic situation" yielded the following: those subjects answering "Yes" reported 48 dissociative reactions while those subjects answering "No" reported 12 dissociative reactions (Binomial test $p < .01$). "Aware of a single modality during the trauma" yielded the following: subjects answering "Yes" reported 34 dissociative reactions, and subjects answering "No" reported 36 dissociative reactions. These were not significantly different.

Discussion. The first question, "Ignored aspects of the traumatic situation," is an explicit reference to the hypothesized mechanism involved in dissociation. As hypothesized, subjects who reported ignoring aspects of the traumatic situation reported significantly greater numbers ($p < .01$) of dissociative reactions. The second question, "Aware of a single modality," did not differentiate significantly between frequency of dissociation. Although at the time of the questionnaire's construction this question seemed to assess this hypothesis, it is apparent, on further consideration, that it is not adequate. A person can, for example, focus on the world, dissociating the body, and still "process" all sensory modalities. In effect, the non-significant result is not inconsistent with the hypothesis. Overall, therefore, the results support Hypothesis 1.

The perceptual mechanism which leads to loss of or alteration in aspects of the background can be spontaneous or intentional. In other words, the original formulation posited that the intensity and suddenness of a traumatic threat automatically "grabs" perception leading to the inhibition of the perception of background components. This shifting

TABLE 3
Total Number of Dissociative Reactions by Traumatic Condition for Subjects Reporting Single Trauma (N=82)

Dissociative Reaction	Traumatic Condition						
	Startle N=56	Anticipation N=20	Expect Hurt N=4	Were Hurt N=15	Pain During N=22	Calm N=28	Emotional N=44
"See" yourself from outside the body	10(18.2) ^a	5(25.0)	1(25)	4(26.7)	6(27.3)	2(7.1)	13(30.2)
Body seem to change size	6(10.7)	5(25.0)	1(25)	2(13.3)	2(9.1)	2(7.1)	6(13.6)
Experience body as not belonging to self	8(14.5)	4(20.0)	1(25)	4(26.7)	4(18.2)	2(7.1)	9(20.9)
Experience the body as unreal	7(12.7)	3(15.0)	1(25)	3(25.0)	3(13.6)	1(3.6)	7(16.3)
Time stops	14(25.5)	5(26.3)	2(50)	3(20.0)	7(31.8)	4(14.8)	15(34.1)
Observe mental processes from outside	19(33.3)	10(50.0)	1(25)	4(26.7)	7(31.8)	7(25.0)	18(40.0)
Lose the sense of your own reality	26(47.3)	12(60.0)	2(50)	5(35.7)	14(63.6)	7(25.0)	28(63.6)
Experience the world as unreal	22(39.3)	8(40.0)	2(50)	4(26.7)	8(36.4)	8(28.6)	19(43.2)
Have a strong feeling of unreality	34(58.6)	12(60.0)	2(50)	6(40.0)	13(59.1)	15(53.6)	28(60.9)
Objects appear farther away than usual	10(18.2)	6(30.0)	0(00)	2(13.3)	4(18.2)	6(21.4)	11(25.6)
Objects appear closer than usual	15(27.3)	5(25.0)	1(25)	5(33.3)	6(27.3)	7(25.0)	12(27.9)
Time speed up	18(32.7)	7(35.0)	2(50)	6(40.0)	11(50.0)	8(28.6)	13(30.2)
Time loss – gaps in time	25(46.3)	11(57.9)	3(75)	10(62.5)	11(50.0)	12(41.4)	20(47.6)
Time slow	31(55.4)	14(73.7)	4(80)	10(62.5)	14(66.7)	18(66.7)	27(60.0)
While awake, experience yourself in a dream	25(44.6)	7(35.0)	3(75)	7(46.7)	10(45.5)	12(42.9)	18(40.9)
Average number dissociative reactions per subject	0.32	0.38		0.33	0.36	0.26	0.37
Standard deviation	.16	.17		.16	.18	.18	.16
Chi square within traumatic condition	62.33	16.17*		17.20*	21.97*	40.83*	44.93
Degrees of Freedom	14.0	14.0		14.0	14.0	14.0	14.0
Significance	p<.001	p≈.30		p≈.25	p≈.10	p<.001	p<.001

* Chi squares corrected for continuity.

^a Numbers in parentheses are the percent of subjects in a traumatic condition endorsing a dissociative reaction.

of perception need not be spontaneous but can be intentionally generated, as in hypnotic-like experiences (see Carlson & Putnam, 1989). A traumatized or non-traumatized person could consciously shift awareness away from some background aspect and experience dissociation. Consequently, conscious avoidance which allows the individual to ignore or inhibit perception can also generate dissociation.

Hypothesis 2

Different kinds of trauma would produce different dissociative reactions. The frequency of total number of reported dissociative reactions was analyzed across different traumatic conditions. The data from the 82 subjects who reported having been traumatized once ($T=1$) are presented in Table 3.

The columns display the number of subjects who reported experiencing the trauma a specific way. For example, 56 of the 82 subjects indicated that the trauma was startling or sudden. The data in the body of Table 3 are the numbers of subjects reporting a specific dissociative reaction within a traumatic condition. Thus, 10 or 18.2% of the 56 subjects who experienced that trauma as startling saw themselves from outside the body.

Did different traumatic conditions differentially evoke dissociative reactions?

The first question to answer is whether different kinds of trauma evoke a greater number of dissociative reactions. To answer this question, the average number of dissociative reactions per subject was computed for each dissociative reaction. In other words, the 10 responses in the "See yourself from outside the body" in the "Startle Condition" was divided by the 56, the total number of subjects who experienced the trauma as startling. This was necessary to equate conditions since different numbers of subjects experienced different traumatic conditions and, as a result, the number of dissociative reactions per subject could then be compared. The means and standard deviations for average number of reactions for each kind of dissociative reaction for each traumatic condition are listed in Table 3. The "Expect to be Hurt" condition was excluded since there were only 4 subjects. Table 4 displays the results of a one-way analysis of variance comparing the average number of dissociative reactions across traumatic conditions. The results are non-significant. A Newman-Keuls multiple comparison indicated that no two means are significantly different from each other at the .05 level of significance. In other words, the different traumatic conditions evoke dissociative reactions which are not sig-

TABLE 4
Analysis of Variance for Number of Dissociative Responses
Between Traumatic Conditions

Source	Sum of Squares	Degree of Freedom	Means Squared	F - Ratio	Approximate Probability
Total	5.25	184			
Condition	0.28	5	0.06	2.01	0.080
Error	4.97	179	0.03		

TABLE 5
Friedman's Two-Way ANOVA by Ranks for Numbers
of Dissociative Responses

Traumatic Condition	Mean Rank	Median
Startle/Sudden	5.6	18
Anticipated Trauma	2.77	7
Were hurt	1.47	4
Pain during	3.03	7
Calm during	2.73	7
Emotional during	5.4	15

Cases: 15, Chi squared: 57.85, Df: 5, Prob: <.0001

nificantly different in number.

Hypothesis 2 proposes that different traumatic conditions evoke different dissociative reactions. Each traumatic condition had 15 possible dissociative reactions. Chi squares were computed within each traumatic condition comparing the frequencies of dissociative reactions. Since the null hypothesis would assert that there is no difference in numbers of dissociative reactions, the expected frequency of response was established by using the mean for each traumatic condition. The "Expect to get physically hurt" condition was excluded since there were only four subjects. Four analyses needed to be corrected for continuity since the expected frequency was between five and ten. Three of the six analyses (see Table 3) were significant at less than the .001 level.

Notice, for example, that the startle condition shows significant differences between numbers of dissociative reactions while the anticipate condition does not. That "pain during" and "were hurt" are both non-significant is expected since they are similar traumatic conditions. Both the emo-

TABLE 6
Chi Squares for Total Number of Dissociative Reactions During Non-Traumatic Times (T=0), During One Trauma (T=1)
and During Two or More Traumas (T≥2)

Dissociative Reaction	Number of Reported Traumas			Chi squares					
	T=0* N=90	T=1** N=82	T≥2** N=107	T=0, T=1, & T≥2		T=0 & T≥1		T=1 & T≥2	
				df=2	p	df=1	p	df=1	p
"See" yourself from outside the body	8(9)***	15(18)	21(20)	4.80	.092	4.74	.030	.05	.817
Body seem to change size	9(10)	8(10)	11(10)	.01	.993	.00	.989	.01	.905
Experience body as not belonging to self	10(11)	12(15)	15(14)	.55	.760	.53	.465	.01	.905
Experience the body as unreal	11(12)	10(12)	11(10)	.24	.886	.02	.888	.17	.678
Time stop	11(12)	19(23)	24(22)	4.35	.115	4.33	.038	.01	.904
Observe mental processes from outside	19(21)	25(30)	32(30)	2.53	.285	2.52	.113	.01	.931
Lose the sense of your own reality	21(23)	34(41)	46(43)	9.57	.009	9.52	.002	.04	.833
Experience the world as unreal	23(26)	28(34)	32(30)	1.52	.469	1.12	.291	.39	.535
Have a strong feeling of unreality	27(30)	44(54)	53(50)	11.55	.003	11.23	.001	.32	.574
Objects appear farther away than usual	29(32)	16(20)	19(18)	6.56	.038	6.48	.011	.63	.428
Objects appear closer than usual	30(33)	19(23)	27(25)	2.59	.275	2.49	.115	.11	.743
Time speed up	38(42)	24(29)	39(36)	3.12	.211	2.09	.149	1.08	.300
Time loss – gaps in time	39(43)	35(43)	50(47)	.37	.829	.45	.502	.31	.580
Time slow	42(47)	47(57)	61(57)	2.69	.261	2.69	.101	.00	.966
While awake, experience yourself in a dream	51(57)	30(37)	47(44)	7.23	.028	6.23	.013	1.04	.309

* Dissociative reactions during non-traumatic times

** Dissociative reactions during a trauma

*** Numbers in parentheses are percentage of subjects for a traumatic condition reporting a specific dissociative reaction.

tional and calm conditions show significant differences between numbers of dissociative reactions. What is noteworthy is not that there are some non-significant results, but, rather, consistent with the hypothesis, that traumatic conditions result in significantly different kinds of dissociative reactions. This supports the hypothesis that traumatic conditions evoke significantly different numbers of different dissociative reactions. One can conclude, in general, that dissociative reactions occur at different rates unique to a specific traumatic condition.

Do different traumatic conditions evoke different dissociative reactions? A Friedman's two-way ANOVA by ranks was computed, excluding the "Expect Hurt" condition since there were insufficient data to warrant analysis of that condition. The results are presented in Table 5. The ranking of the dissociative symptoms is significantly different for the different traumatic conditions. In other words, consistent with the hypothesis, in this sample of subjects, different traumatic conditions, even though they evoke essentially the same number of dissociative responses, evoke different kinds of dissociative responses.

Discussion. The significance of this result is that different traumatic experiences evoke different kinds of dissociative reactions. It would be clinically and theoretically useful to attempt to clarify what kind of dissociative reaction is associated with what kind of trauma. Clearly, the current theory attempts to do this, but this theory is preliminary and subject to empirical verification. Furthermore, this theory considers only a slice of the relevant phenomena, and a more comprehensive view would broaden it.

Hypothesis 3

Psychologically simple dissociative reactions would occur more frequently than more complex and psychologically demanding reactions. The original theoretical model has been presented in Table 2 and predicts that the least complex and psychologically demanding dissociative reactions will occur most frequently and that the most complex and psychologically demanding dissociative reactions will occur least frequently. The original model predicted that most frequent would be time-based, then world-based, body-based, mind-based and, least frequent would be I-based dissociative reactions. The assumption made in the theory is that more severe trauma, creating greater psychological "demand" and duress, would evoke the more complex and, consequently, the less frequent, dissociative reactions. An empirical ranking of dissociative reactions should reveal this sequence.

Table 6 displays the number of dissociative reactions in three circumstances: during non-traumatic times by subjects reporting no trauma ($T=0$); during trauma by subjects reporting one trauma ($T=1$); and during trauma by subjects reporting two or more traumas ($T\geq 2$).

Beere (1991a, 1991b, in press) has made the observation that naturally occurring dissociation has not been studied

and understanding trauma-evoked and pathological dissociation must connect in some way to those phenomena. The first noteworthy result, consistent with Beere's observation, is that large numbers of the 90 non-traumatized subjects who report no trauma endorse dissociative reactions. These range from 9% who report "seeing" themselves from outside the body to 57% who report "while awake, experience yourself in a dream." Clearly dissociative reactions are common, even among individuals who, on the whole, are non-dissociative. This is a phenomenon that requires explanation; an explanation that cannot readily be given on the basis of this research, and might begin to clarify dissociativity or the predisposition to dissociation (Braun & Sachs, 1985; Kluff, 1984).

The number of dissociative reactions during non-traumatic times for the two traumatized groups of subjects were compared with that for the non-traumatized subjects. Chi squares between these groups on each dissociative reaction yielded no significant differences. Thus, the number of reported dissociative reactions for the non-traumatized subjects during non-traumatic times is not significantly different from those reported by all traumatized subjects during non-traumatic times. In other words, all subjects (both non-traumatized and traumatized) report "everyday" dissociative reactions not significantly different in number.

Is the current sample of college students more dissociative than the norm? The mean DES score for the 290 subjects in this study was 18.9 ($S.D. = 20.95$). Ross et. al. (1991) used DES scores greater than 22.6 as their cut-off for high dissociators. The median score for the present study was 11.0. Bernstein & Putnam (1986) report that 31 late adolescent college students had a median DES score of 24 and Ross et. al. (1989) report that 345 college students obtained a median DES score of 7.9. More recently, Carlson & Putnam (1993) summarize research on the DES and note that "late adolescents score relatively high on the DES" (p. 18), having a mean between 12.7 and 23.8. The present sample of college students appears comparable to those studied by other researchers.

Table 6 shows chi squares comparing the number of dissociative reactions endorsed by the different groups: non-traumatized during non-traumatic times ($T=0$), single trauma during trauma ($T=1$), and two or more traumas during trauma ($T\geq 2$). The non-traumatized group's responses provide a baseline for dissociative reactions during non-traumatic times since they were not significantly different from numbers of dissociative reactions during non-traumatic times for the two traumatized groups. The data for the $T\geq 2$ group is somewhat difficult to interpret since the questions ask subjects to indicate which dissociative reactions they experienced during trauma. One cannot know whether these dissociative reactions occurred in all, some, or one of those traumas. However, chi squares comparing the number of dissociative reactions during trauma for both the $T=1$ and

TABLE 7
The Original Model, Hypothesized Frequency and Average Rank* of Background-Related Dissociative Reactions for the Different Groups

	Original Model	T=0	T=1	T≥2
Self/I	Least frequent	—	—	—
Mind		5	8	7.5
Body	Moderate	2.2	2	2
World		7	6.2	5.8
Time	Most frequent	8.4	8.6	8.75

* The greater the number, the more frequently the reaction occurs.

T≥2 groups show that they are not significantly different. (See Table 6.) The comparisons which are most easily interpreted are those between the T=0 and T=1 groups.

Discussion. For this sample of subjects, there was no significant difference in the frequency of nine dissociative reactions between the traumatic and non-traumatic times. Six specific dissociative reactions did significantly differentiate between traumatic and non-traumatic times: significantly increased frequency of observing the body from outside, of time stopping, of losing the sense of their own reality, and of having a strong feeling of unreality; as well, a significantly decreased frequency of objects appearing farther away than usual and while awake, of being in a dream-like state. Are these last two dissociative reactions in some way unique and reveal a different response to trauma?

Do these data imply that some traumas require people to focus more clearly on reality and not to dissociate? It has already been demonstrated that there are different kinds of dissociative responses to different kinds of trauma. It seems reasonable also to posit that during some kinds of trauma, people react less dissociatively or more reality-attuned than usual. For example, during a trauma which requires a reality-based response, do people experience reality sharply in order to cope with the situation? Based on the theory being tested here, a non-dissociative response would require the traumatic situation *not* to demand focus on a specific threat, internal or external, and the trauma should not be sudden or startling. Furthermore, a precondition for a non-dissociative response to trauma might require that the individual feel capable of coping with what is presented by the trauma. Lastly, might some dissociative reactions follow an

inverted-U? At a low severity or intensity do people experience less dissociation and, then, as severity or intensity increases, do people then begin to experience more dissociatively? These conjectures are empirically testable.

In considering the results presented in Table 6, three dissociative reactions might pertain to both "mind" and "world" background components. These are "while awake, experience yourself in a dream," "have a strong feeling of unreality," and "lose the sense of your own reality." These cluster among the most frequently endorsed during trauma and all showed significant differences between the non-traumatic and traumatic situations. It is conceivable that, given the multiple ways of interpreting these items, these items might have several different sources for their rate of endorsement. Furthermore, it was difficult to define the precise background source for "See yourself from outside the body" which could be an "I," a "mind" or possibly a "body"

dissociative reaction.

These four ambiguous items were eliminated from consideration in the following analysis and the remaining 11 items were assigned ranks. The average rank per item for a given background condition was calculated and then averaged for that background condition. The data is displayed in Table 7.

Collapsing the specific dissociative reactions in this fashion masks some important distinctions which will be considered later. Furthermore, there is only one "mind" item being considered. Overall the data indicates that the model needs to be revised.

Inconsistent with the model, changes in the experience of the body are least frequent. In the original formulation (Table 2), mind was placed into the least frequent position. On reflection, the obtained data are understandable since the body is a stable and consistent source of perceptual input, a perceptual constant resistant to change. It would require greater "force" to alter perception of the body than perception of the mind which is more fluid. To begin to experience a change in the size or shape of the body would require a striking alteration in perceptual processing.

The original model supposed that mind-related dissociative reactions would be more difficult to evoke than world-related ones. The data suggest otherwise. The world outside the body is also a source of consistent and reliable sensory input. Perception of the "world," in contrast to the perception of "mind," would seem to remain more stable or resistant to change. To begin to experience objects as closer or farther away would dramatically shift the consistency of world-related experience. There is, however, continual internal

processing of the incongruities inherent in perception such that, for example, size and color appear constant. Thus, distant objects which stimulate small areas of the retina are perceived equal in size to objects which stimulate larger areas. World-related perception, though experientially consistent, involves continual processing of input inconsistencies. Body-related perception does not involve the processing of such inconsistencies. In other words, the empirical ranking of body-related items least frequent, then world-related items, and last mind-related items makes sense when what is involved in each one is considered anew and clarifies how the data accords with the basic logic of the theory.

The role of the "I/Self" in the model also requires additional discussion. No data have yet been gathered to confirm its position in the model. It is possible that the "I/Self" and the "Mind" components need to be differentiated more. In the original model, the "I/Self" component referred primarily to alterations in volition. It should be easy to evoke different states of mind but much more difficult to evoke self-discrepant action and even more difficult to evoke "non-willed" action. In a preliminary way "mental" phenomena might hypothetically order as follows: mind-discrepant experiences (such as unusual mental events), self-discrepant experiences (such as emotions or thoughts), self-discrepant intentions, self-discrepant acts, non-willed or non-intended acts, and acts of an alternate-self.

Perceiving the body from outside, although it is not a change in volition, significantly shifts the location of the perceiver. DID clients frequently report seeing alters outside and, at other times, seeing their own body from outside. Consequently, this particular dissociative reaction might be a transitional one, possibly occurring prior to or along with the formation of alters.

Additional complications in constructing a simple model are apparent when considering Table 6. In considering derealization, to experience the world as unreal is probably a qualitatively different dissociative experience than to experience objects farther away. Similarly, a global feeling of being unreal or experiencing the body as unreal is qualitatively different than seeing one's hands becoming smaller. The former, in both cases, is a pervasive quality of integrated perceptual experience; the latter, in both cases, involves marked changes (size, distance, color) in the perception of objects.

In addition, time-related dissociative reactions were considered unitary in the original model. The data presented in Table 6 point out that time-stopping and time-speeding up are probably different kinds of dissociative reactions from time slowing and time loss. Consequently, as more data are gathered, the original model will need to be differentiated and those differentiations understood in the context of theory. In the light of the present data, a revised model was constructed and is presented in Table 8.

A confounding variable, which limits the usefulness of the data, might be the restricted range of traumatic severi-

TABLE 8
The Revised Model

Self/I	
Body	Time faster or stop
World	
Mind	Time slowing or loss

ty. Since specific traumatic situations tend to evoke specific kinds of dissociative reactions, it is unclear whether this sample of subjects in fact suffered the full range of possible trauma which could then evoke the full range of possible dissociative reactions; nonetheless, consistent with the third hypothesis and the view set forth here, different dissociative reactions do appear to rank order in frequency.

Hypothesis 4

Time slowing pertains to anticipation of trauma opposed to its being sudden.

For the purposes of this research, the experience of the *passage of time* is understood in the following way. The background is peripherally perceived and "tracked" coincident with figure-ground perception. There is, as it were, a certain base-rate amount of information continually monitored. Experienced time involves tracking ongoing perceptual changes in the figure, ground and background. For example, I sit quietly watching the river. I note the river's flow and the ripples on the surface and hear the burble from unseen rocks downstream. Periodically, I swallow, shift my position slightly, and sometimes notice my breath and my eyes. Occasionally a marshy smell comes with a breeze I feel against my left cheek. Though relatively static, "perceiving the river" involves a plethora of changing percepts in figure, ground and background. Tracking these changing percepts generates the experience of time – that "watching the river" took place over time.

What happens if perceptual input is limited to the figure? In the present hypothesis, the anticipated threat in the world becomes the perceptual focus and the background components are perceived less focally or not at all. Taking the extreme situation to make the point, if all perceptual input stems from the threat, none comes from the background. Since the experience of the "normal" passage of time involves tracking perceptual input from figure, ground and background, anticipating a threat would involve tracking only the figure which "expands" or "slows" the subject-

TABLE 9
Number of Traumatized Subjects Who Reported Time Slowing Who Anticipated the Trauma Compared to the Non-Traumatized Subjects

Trauma Anticipated	Observed	Expected
Yes	14	9.4
No	6	10.6

Chi square = 4.25, df=1, p=.04

TABLE 10
Number of Traumatized Subjects Who Reported Time Slowing Who Experienced a Startling/Sudden Trauma Compared to the Non-Traumatized Subjects

Trauma Startling/Sudden	Observed	Expected
Yes	31	26.32
No	25	29.68

Chi square = 1.57, df=1, p=.211

TABLE 11
Number of Subjects Who Reported Time Stopped During a Startling or Sudden Trauma

	Observed	Expected
Yes	14	6.72
No	42	49.28

Chi square = 8.96, df=1, p=.003

tive experience. There is, in effect, "less" happening perceptually over the same "objective time" and, thus, time is experienced more slowly.

In contrast, even though a startling trauma should lead to a sharp perceptual focus on the threat, it would stop time, not slow it. To explain this more fully, since experienced time involves tracking changing perceptual input, time would stop when perceptual input does not change. This would occur with a sudden and startling trauma that affixes perception to the threat. (See Hypothesis 7). In other words, the suddenness of the trauma interrupts the natural flow of perceptual input.

Time would speed up when the threatening situation demands sharp and attentive perception to all aspects of the perceptual context: figure, ground, and background. In this latter situation, there is more perceptual input than usual (thoughts, sensations, sights) and, as a result, "more" is happening perceptually in the same "objective time period" and, thus, experienced time seems faster.

The data are presented in Tables 9 and 10. The number of subjects who reported time slowing in the anticipated and startling/sudden trauma conditions was compared to the base-line percentage of subjects who reported time slowing in the non-traumatized group. Following is an example of the data analysis performed here and subsequently. Table 3 indicates that 14 of the 20 subjects who anticipated the trauma experienced time slowing, and, by subtraction, six did not. Table 6 indicates that 47% of the T=0 group reported time slowing. Consequently, 47% of the 20 subjects, or 9.6 should be the expected number of non-traumatized subjects reporting this dissociative reaction, and 10.6 should not report this dissociative reaction. Since the expected frequency is greater than five, a chi square was calculated. If, however, the expected frequency is less than five, the binomial test would be calculated. As can be seen from the data, subjects who anticipated the trauma report time slowing significantly more frequently ($p=.04$) than expected. In addition, subjects who experienced the trauma as startling or sudden did not experience time slowing significantly ($p=.211$). These results support Hypothesis 6.

Hypothesis 5

Time stopping would pertain to startling trauma. The rationale for this hypothesis was presented in the introductory passages for Hypothesis 4. Fifty-five subjects who had been traumatized once reported that the trauma was startling or sudden. Expected frequency of response was derived from the non-traumatized subjects. Table 11 displays the data. The result is in the expected direction and significant ($p=.003$).

Hypothesis 6

Depersonalization pertains to unacceptable thoughts or emotions. No questionnaire items asked about thoughts. However, two questions asked about emotional state during the-trau-

TABLE 12
 Depersonalization Reactions and Emotionality: Non-parametric Comparisons Between Dissociative Reactions
 During Traumatic and Non-traumatic Times

Dissociative Reaction	Calm During Trauma	Emotional During Trauma
"See" yourself from outside the body	Binomial test $p=.264$	Binomial test $p=.0007$
Lose the sense of your own reality	Chi square=.06, $df=1$, $p=.802$	Chi square=41.03, $df=1$, $p=.000$
Observe mental processes from outside	Chi square=0.27, $df=1$, $p=.604$	Chi square=9.79, $df=1$, $p=.002$
Have a strong feeling of unreality	Chi square=7.41, $df=1$, $p=.007$	Chi square=20.87, $df=1$, $p=.000$
While awake, experience self in a dream	Chi square=2.29, $df=1$, $p=.131$	Chi square=4.65*, $df=1$, $p=.032$

* Significant in the direction opposite from that hypothesized

ma: emotional or calm. The frequency of dissociative reactions provided by the 90 non-traumatized subjects established the expected frequency of response against which the reported dissociative reactions during trauma could be compared. Either chi squares or binomial tests, depending on the size of the expected frequency, were calculated for all five measures of depersonalization for the two emotionality conditions. The results are summarized in Table 12.

Discussion. These results are not precise tests of the hypothesis since subjects did not report that the emotion was unacceptable, but they lend support to the current hypothesis. Although the frequency of all the dissociative reactions reported while emotional during trauma are significantly different from expected frequencies, the "dream" item is significantly different in the wrong direction. That is, subjects report experiencing as in a dream significantly less frequently when emotional during a trauma. It is unclear whether being in a dream-like state involves changes in the experience of the mind (depersonalization) or of the world (derealization). Thus, the item is ambiguous for the purposes of this hypothesis. All but one of the dissociative reactions while calm were non-significant. The significant item, "a strong feeling of unreality," is also ambiguous since it might refer to derealization, depersonalization, or disembodiment.

A post hoc analysis of the rationale for this hypothesis reveals a possible two-fold sequence for dissociative reactions associated with emotionality. The first step in the sequence posits that the subject must have perceived the bodily experiences associated with emotion. In other words, being emotional guarantees perception of the body and, if sufficiently intense, depersonalization, and possibly derealization, would result. Although neither intensity nor kind of emotion was assessed in this research, in a traumatic situation it is likely that emotions will be intense and, consequently, be a significant perceptual focus. The dissociative reaction would occur prior to and independent of the subject being aware

whether the emotion was acceptable or not.

The unacceptability of the emotion is the second step of the two-fold sequence. If the emotion is self-discrepant or unacceptable, it could lead to a second-step dissociative reaction in response to the emotion itself. The person might consciously shift attention away from the emotions or might feel shame if the emotions are mortifyingly self-discrepant.

Emotions are not clearly located within a specific background component. An emotion, as argued within the history of psychology, involves cognitive, physiological, and environmental aspects; in the terminology of the current theory emotion involves body, mind, and world. If the emotion is intense, then perception would be strongly linked to the body, as argued above, although the environment (world) continues to be perceived. Consequently, one might anticipate depersonalization more than any other dissociative reaction to be associated with intense emotionality. The results support this argument.

These results are inconsistent with current thinking which would contend that dissociation is a defense against emotion. Dissociation is described as "the basic defense mechanism" (Ross, 1989, p. 88) and a "defense against trauma" (Spiegel, 1986, p. 69). "The MPD literature favors the term dissociation to describe the processes used by a person to escape mentally from danger. . . ." (Marmer, 1991, p. 677). "Dissociation . . . serves as a defense . . . against trauma while it is occurring. . . . These spontaneous experiences are often extremely helpful in allowing the person to defend against overwhelming fear, pain, and helplessness" (Spiegel, 1993, p. 117). In other words, an absence of emotion, in the more typical paradigm, would imply a dissociative, defensive response during the trauma, leading one to conclude that dissociation would be more likely when the subject is non-emotional. By logical extension, the experience of emotion would suggest an absence of defensiveness and, as a result, less of a need to defend dissociatively. The results are incon-

TABLE 13

Number of Subjects Anticipating the Trauma Who Report Observing Mental Processes From the Outside During the Trauma

	Observed	Estimate
Yes	10	4.22
Observed mental processes		
No	10	15.78

Binomial test p = .000

TABLE 16

Number of Subjects Anticipating the Trauma Who Report Experiencing the Self in a Dream During Trauma

	Observed	Estimate
Yes	7	11.4
Experienced self in a dream		
No	13	8.6

Chi square = 3.95, df = 1, p = 0.047

TABLE 14

Number of Subjects Anticipating the Trauma Who Report a Strong Feeling of Unreality During Trauma

	Observed	Estimate
Yes	12	6
Strong feeling of unreality		
No	8	14

Chi square = 8.57; df = 1, p = 0.004

TABLE 17

Number of Subjects Anticipating the Trauma Who Report "Seeing" the Self From Outside the Body

	Observed	Estimate
Yes	5	1.8
"See" self from outside body		
No	15	18.2

Binomial test p = .002

TABLE 15

Number of Subjects Anticipating the Trauma Who Report Losing the Sense of Their Own Reality During Trauma

	Observed	Estimate
Yes	12	4.6
Lost sense of own reality		
No	8	15.4

Binomial test p = .0003

TABLE 18

Number of Subjects Experiencing a Sudden or Startling Trauma Who Perceived Objects Farther Away Than Usual

	Observed	Estimate
Yes	10	17.72
Objects farther away		
No	46	38.08

Chi square = 5.15, df = 1, p = 0.024

sistent with this view: experiencing emotion during trauma and reacting dissociatively happen together.

It needs to be pointed out that the theoretical statements about dissociation quoted in the preceding paragraph pertained to pathological dissociation stemming from repeated and severe trauma. The current research focuses narrowly on dissociative reactions during a single trauma. Consequently, this research cannot address dissociation as a defense mechanism developed over prolonged abuse. On the other hand, these theories sometimes consider dissociation as an immediate response to trauma. In this regard, the current research suggests that a dissociative reaction is not necessarily a defensive response to trauma.

Future research could focus on specific affects and their relationship to dissociation. Most thinking about dissociation, for example, links it with fear, pain, and helplessness. Does dissociation occur with other affects? In addition, does intensity of affect significantly contribute to dissociation? According to the theory being tested in the current research, intensity would be a significant factor in the first of the stage of the proposed two-stage sequence. Finally, how long do the emotions persist vis-a-vis the duration of the trauma? Thus, as emotions rise and fall over an extended traumatic experience what happens to dissociative reactions?

Hypothesis 7

Depersonalization would pertain to anticipated trauma. Five items possibly asked about depersonalization: "Observing mental processes as if from the outside"; "Have a strong feeling of unreality"; "Lose the sense of your own reality"; and "While awake, experience yourself dreaming or in a dream" and "Seeing yourself from outside the body." Twenty subjects reported that they had anticipated the trauma. The frequency of their report of a dissociative reaction was compared to the frequency of reported dissociative reactions by the 90 non-traumatized subjects who provided a base-line frequency of response. The data are presented in Tables 13 through 17.

Discussion. As can be seen from the results, all five measures of depersonalization were significant, although only four support the hypothesis that anticipation of trauma would be associated with depersonalization. Counter to the hypothesis and counter-intuitively, "experiencing oneself in a dream" was significant in the wrong direction. That is, subjects who anticipated the trauma reported being in a dream significantly less frequently than base-rate expectations. In the context of the four other significant measures of depersonalization which supported the hypothesis, the latter result requires explanation.

The logic of this hypothesis is that anticipating a trauma will lead the subject to perceive closely the world-related events unfolding toward the traumatic incident. Consequently, perception will gravitate to the world, the mind component of the background will be ignored and result in

depersonalization reactions. Perception, therefore, will be closely following external events in the world.

"Being in a dream" would seem to be a depersonalization reaction. Dreams, however, involve experiencing oneself in the world in a "dream-like" way. Since perception during an anticipated trauma would be focused closely on unfolding events in the world, it is reasonable, in retrospect, to conclude that subjects would find their experience more reality-based and less dream-like.

Hypothesis 8

Derealization would pertain to startling trauma. The rationale for this hypothesis derives from the more general explanation of how dissociative reactions occur at the time of a trauma. According to the present hypothesis, when a trauma is startling, perception fixes to the startling figure. The threat is "in the world." In this situation, however, even though perception focuses on the world, the world's background, according to this hypothesis, is lost since perception focuses narrowly on the threat. Consequently, even though the threat is in the world and that aspect of the world is perceived, the background characteristics of the world would be lost, leading to derealization. Three dissociative reactions pertained clearly to derealization: "Objects appear closer than usual"; "Objects appear farther away than usual"; and "Experience the world as unreal." Two additional items might, in addition to assessing depersonalization, tap derealization: "Have a strong feeling of unreality" and "Lose a sense of your own reality." For the 56 subjects who indicated that the trauma was startling or sudden, the number of subjects endorsing the five derealization, dissociative reactions during trauma was compared with base rate of responding to those reactions by the 90 non-traumatized subjects. The data are presented in Tables 18 to 23.

Discussion. Although four of the six measures of derealization were significant, only three supported the hypothesis. The two items pertaining to changes in the perceived distance of objects did not support the hypothesis: "objects closer" was not significant, and "objects farther away" was significant in the wrong direction. That is, objects were perceived farther away significantly less frequently during this one trauma than during non-traumatic times. In part, consistent with the discussion relevant to Hypothesis 3, changes in perceived distance of objects possibly requires extremely severe or intense traumatic conditions. Furthermore, when a stimulus is startling, perception sharply focuses on the threat. In other words, the objects perceived are perceived clearly and sharply. It is likely, therefore, that the distance of perceived objects would not be perceived dissociatively even when, overall, the traumatized individual experiences the world as unreal, as demonstrated by the three more global measures. Similarly, as argued in the discussion of the results of the prior hypothesis, being in a dream-like state would be inconsistent with a sharp perceptual focus on reality events.

Consequently, even though three of the measures did not achieve significance as hypothesized, the logic underlying this hypothesis can explain the results.

Hypothesis 9

Disembodiment pertains to anticipated bodily injury, and not actual bodily injury. Disembodiment was defined as dissociative reactions pertaining to the body (bodily estrangement, size change or unreality). It was hypothesized that injury would focus perception on the body itself, making it a perceptual focus and not a dissociative symptom. To anticipate injury, however, would require focusing attention on the potential external threat, leading perception away from the body, excluding the body from the background and generating body-related dissociative reactions.

Considering actual bodily injury, the total number of disembodiment reactions was summed (range 0 to 4) for each subject. These totals were then compared across the condition "Were Hurt" and "Were not Hurt." Table 24 presents this data and indicates that there was no significant difference in body-related dissociative reactions for subjects who were physically hurt and were not physically hurt. Consistent with the hypothesis, getting hurt yields no significant difference in numbers of body related dissociative reactions.

Only four of the 82 subjects who reported a single trauma indicated that they expected to get hurt. One subject endorsed all disembodiment items and three subjects endorsed no disembodiment items. Although the small N makes these data uninterpretable, these results are not encouraging. The "Anticipate Trauma" condition is similar to the "Expect Hurt" condition in that both hypothetically involve perceiving unfolding world events. Consequently, the "Anticipate" condition should provide another way to assess this hypothesis. Four questionnaire items asked about disembodiment reactions: "Body seems to change size," "Experience body as not belonging to self," "Experience the body as unreal" and possibly "See yourself from outside the body." The last item might more reasonably be a depersonalization reaction. The results are presented in Tables 25 to 28. Since the all expected frequencies were less than five, binomial tests were used for each analysis. As can be seen, two of the four analyses were significant.

Discussion. Although the results are not unequivocal, in general, they were predicted by the theory. The two analyses which were not significant had the smallest N (4 and 3, respectively). Consequently, these results might be a function of sample size. Nonetheless, according to conventional views associated with dissociation, these results would not be anticipated. In other words, traditional ways of conceptualizing disembodiment reactions would be as a defense against having been hurt. This result proved non-significant and predicted. By contrast, anticipating the trauma did significantly differentiate subjects who saw the body from outside and experienced the body change size. Once again, these

results are consistent with the theory.

Hypothesis 10

Derealization would pertain to the experience of bodily pain.

The rationale for this hypothesis is that attention to the body will lead to loss of or change in the other background components and, thus, lead to changes in the world-related background. The same five questionnaire items evaluated for Hypothesis 9 were evaluated here. Tables 29 to 32 present chi squares for each dissociative reaction. As can be seen only one analysis is significant: subjects experiencing pain experienced a strong feeling of unreality significantly more frequently than expected.

Discussion. Most disconcerting about these results, in the context of the significant results reported earlier in this paper, was that experiencing the world as unreal was not significant. Were the theory correct, this item should have demonstrated significance. The distance of objects had not yielded significance previously and results of the present analyses were consistent with the previous analyses. The item "have a strong feeling of unreality," as discussed earlier, could be interpreted as stemming from loss of or change in mind, world, or body aspects of the background. Consequently, although significant, it does not support the hypothesis.

The logic of this hypothesis was that bodily pain would focus perception on the body, leading to loss of or change in perception of the other background components and, as a result, derealization or world-related dissociative reactions would occur. The non-significant results put into question whether the theory being tested here adequately explained bodily dissociative phenomena. Consequently, some post hoc rethinking elicited additional hypotheses which followed from the theory. These post hoc hypotheses should demonstrate whether the theory works adequately for bodily dissociative reactions (disembodiment) and clarify if the theory or its application needs to be revised.

Post hoc hypotheses. The two post hoc hypotheses were: 1) experiencing bodily pain during trauma should not lead to body-related dissociative reactions (disembodiment); and 2) experiencing bodily pain during trauma should lead to mind-related dissociative reactions (depersonalization). As in the prior analyses, the 90 non-traumatized subjects provided an expected frequency of response against which the frequency of response of the 22 subjects who reported being in pain could be compared. Chi squares were computed if the expected frequency was greater than five; binomial tests were computed if the expected frequency was less than five.

The analyses pertinent to disembodiment reactions are presented in Tables 33 to 36. Inconsistent results were obtained with two items. "Experiencing the body as unreal" ($p=.009$) and "Seeing the body from outside" ($p=.009$). Although this result seems not to support the first post hoc hypothesis, these items might more appropriately be considered depersonalization reactions, consistent with the second post hoc

TABLE 19

Number of Subjects Experiencing a Sudden or Startling Trauma Who Perceived Objects Closer than Usual

	Observed	Estimate
Yes	15	18.48
Objects closer		
No	41	37.52

Chi square = 0.98, df = 1, p = 0.323, not significant

TABLE 22

Number of Subjects Experiencing a Sudden or Startling Trauma Who Reported Losing the Sense of Their Own Reality

	Observed	Estimate
Yes	26	12.88
Lost own reality		
No	30	43.12

Chi square = 17.36, df = 1, p = 0.000

TABLE 20

Number of Subjects Experiencing a Sudden or Startling Trauma Who Reported a Strong Feeling of Unreality

	Observed	Estimate
Yes	34	16.8
Feeling of unreality		
No	22	39.2

Chi square = 25.16; df = 1, p = 0.000

TABLE 23

Number of Subjects Experiencing a Sudden or Startling Trauma Who Reported, While Awake, Experiencing the Self as if in a Dream

	Observed	Estimate
Yes	25	31.92
Experienced self in a dream		
No	31	24.08

Chi square = 3.49, df = 1, p = 0.062, not significant

TABLE 21

Number of Subjects Experiencing a Sudden or Startling Trauma Who Reported Experiencing the World as Unreal

	Observed	Estimate
Yes	22	14.3
World unreal		
No	34	41.7

Chi square = 5.57, df = 1, p = 0.019

TABLE 24

Number of Subjects Who Were Hurt Versus Total Reactions of Disembodiment

Number of Reactions	Were Hurt	
	Yes	No
3	1	0
2	2	2
1	2	1
0	10	26

Chi square = 4.44, df = 3, p = .44, not significant

TABLE 25
Number of Subjects Anticipating the Trauma Who Report Body Seeming to Change Size

	Observed	Estimate
Yes	5	2
Body change size		
No	15	18

Binomial test p = .032

TABLE 28
Number of Subjects Anticipating the Trauma Who Report "Seeing" Themselves From Outside the Body

	Observed	Estimate
Yes	5	1.8
"Seeing" body from outside		
No	15	18.2

Binomial test p = .022

TABLE 26
Number of Subjects Anticipating the Trauma Who Report Experiencing the Body as Not Belonging to Self

	Observed	Estimate
Yes	4	2.2
Body does not belong to self		
No	16	17.8

Binomial test p = .11

TABLE 29
Number of Subjects Experiencing Pain During the Trauma Who Report Objects Appearing Farther Away Than Usual

	Observed	Estimate
Yes	4	7.04
Objects farther away		
No	18	14.96

Chi square = 1.93, df = 1, p ≈ .165

TABLE 27
Number of Subjects Anticipating the Trauma Who Report Experiencing the Body as Unreal

	Observed	Estimate
Yes	3	2.4
Body unreal		
No	17	17.6

Binomial test p = .22

TABLE 30
Number of Subjects Experiencing Pain During the Trauma Who Report Objects Appearing Closer Than Usual

	Observed	Estimate
Yes	6	7.26
Objects closer		
No	16	14.74

Chi square = 0.33, df = 1, p ≈ .568

hypothesis.

The five questionnaire items pertinent to depersonalization were discussed in Hypothesis 7. Two of those items ("See yourself from outside the body" and "Strong feeling of unreality") had been included in the derealization analysis. The analyses pertinent to the additional depersonalization reactions (the second post hoc hypothesis) are presented in Tables 37 to 39. Given the prior results pertinent to feeling as if in a dream, those non-significant results (Table 37) are expected. Two results (Tables 38 and 39) are significant. Including the two items which were significant in prior analyses, three of the five measures of depersonalization are significant. Observing mental processes from the outside was not significantly more frequent during a trauma in which the subject experienced pain. Since the other three depersonalization reactions were significant, this outcome implies that observing mental processes is a different kind of dissociative reaction.

One problem with the interpreting these results is the severity of the pain suffered during the trauma. An incidental pain would not fill perception the same way as agony. Likewise, more extensive injury, and thus pain in a larger number of bodily regions, would fill perception more completely than a single injury of equal "pain severity."

Why would bodily pain not lead to derealization? The body might be considered an "object in the world" — in other words, "the body is lived." The body feels the ground, grasps objects, and moves through space. In this regard, the physical body is a critical part of the experienced reality of the world. Consequently, perceiving the body would actually lead perception to the world, rather than away from it as originally posited in this hypothesis. In other words, the logic underlying this part of the hypothesis was in error.

Why, inconsistent with the post hoc hypothesis, would two of the body-related dissociative reactions be significant? Two of the measures (Tables 33 and 34) were not significant, but experiencing the body as unreal (Table 35) was highly significant ($p=.009$). An explanation of these results within the explanatory paradigm of the current theory applies the paradigm to the body itself. Assuming that pain is localized to specific areas of the body, those areas of the body would be the focus of perception. Other, non-painful bodily areas would not be perceived. Consequently, perceiving the whole body, a hypothesized prerequisite for experiencing it as real, would not occur during those traumatic times, and the body would be experienced as unreal. This same logic was used to explain derealization when a trauma is sudden or startling. Furthermore, addressing the non-significant analysis of the "body" not belonging to self, bodily pain is tangibly the subject's. Perception must focus on both pain and body, both of which belong to the subject.

Frequently experienced is the distinction between mind and body which suggests that depersonalization would be a more likely dissociative reaction. This is what one sees from

the results (Tables 33 to 39), although only three of five mind-related dissociative reactions were significant. It is ambiguous, as argued earlier, whether being in a dream-like state is mind-, body-, or world-related dissociative reaction. Being in pain, however, did not lead to a less dream-like state as found in other analyses.

An overview of the obtained dissociative reactions for subjects experiencing pain during a single trauma is: a strong feeling of unreality ($p=.003$), a loss of the sense of their own reality ($p=.000$), observing the body from outside ($p=.009$), experiencing the body as unreal ($p=.009$). These four dissociative reactions can be understood as depersonalization, consistent with the second post hoc hypothesis.

DISCUSSION

Overall, the results provide significant support for the theory and suggest that the perceptual theory of dissociation deserves further consideration. Table 40 summarizes the results. The first seven hypotheses received significant support. Although the eighth and ninth received inconsistent support, the nonsignificant results are explainable by the theory or measurement artifacts. The tenth hypothesis received no support. However, two post hoc hypotheses received significant support. The hypothesized model has proved robust in predicting dissociative reactions.

An Overview of This Research

A spontaneous perceptual mechanism seems to be involved in dissociative reactions during trauma. It would appear that a focused perception on threat inhibits non-threatening perceptual input and leads to the dissociative reaction. This is counter-intuitive and inconsistent with current views about dissociation (Marmer, 1991; Ross, 1989; Spiegel, 1986 & 1993) which describe it as defensive — that is, dissociation serves to cope with threat or trauma by splitting it off. In effect, the current theory posits that *perception* of threat during the traumatic event, *not its defense*, leads to dissociation. It must be noted that the current theory focuses narrowly on dissociative reactions during delimited trauma. It should be apparent, therefore, that this theory considers dissociative phenomena probably occurring within a few minutes before or after the traumatic event. As a traumatic event persists, situational press on perceptual processes will lessen.

Dissociative reactions seem differentiated and responsive to specific qualities of the experienced trauma. Anticipating a trauma, opposed to its being startling, leads to time slowing and depersonalization. A startling trauma leads to time stopping and derealization. Bodily injury does not lead to disembodiment while anticipating the trauma, and possibly injury, does seem to lead to disembodiment. Inconsistent with the hypothesis, pain does not lead to derealization but, as hypothesized post hoc, to depersonalization and not to

TABLE 31

Number of Subjects Experiencing Pain During the Trauma Who Report a Strong Feeling of Unreality

	Observed	Estimate
Yes	13	6.6
Strong feeling of unreality		
No	9	15.4

Chi square = 8.87, df = 1, p ≈ .003

TABLE 34

Number of Subjects Experiencing Pain During the Trauma Who Report Experiencing the Body as Not Belonging to Self

	Observed	Estimate
Yes	4	2.42
Body does not belong to self		
No	18	19.58

Binomial test p = .131

TABLE 32

Number of Subjects Experiencing Pain During the Trauma Who Report Experiencing the World as Unreal

	Observed	Estimate
Yes	8	5.72
World unreal		
No	14	16.28

Chi square = 1.23, df = 1, p ≈ .268

TABLE 35

Number of Subjects Experiencing Pain During the Trauma Who Report Experiencing the Body as Unreal

	Observed	Estimate
Yes	7	2.64
Body unreal		
No	15	19.36

Binomial test p = .009

TABLE 33

Number of Subjects Experiencing Pain During the Trauma Who Report the Body Seeming to Change Size

	Observed	Estimate
Yes	2	2.2
Body change size		
No	20	19.8

Binomial test p = .281

TABLE 36

Number of Subjects Experiencing Pain During the Trauma Who Report "Seeing" Themselves From Outside the Body

	Observed	Estimate
Yes	6	1.98
"Seeing" body from outside		
No	10	20.02

Binomial test p = .009

disembodiment. In addition, it would appear that some dissociative reactions are more difficult to evoke and require trauma of a different kind — possibly, increased severity or intensity, longer duration and, according to this theory, possible action or intention by the traumatized person.

These results suggest that people do not dissociate globally when traumatized; people dissociate in specific ways to specific traumas. The dissociative continuum (see, for example, Braun, 1988) is not a global dissociative response made more severe by more severe trauma, but is constituted by specific reactions. That is how the DES (Bernstein & Putnam, 1986) assesses dissociation. The tenet of this article and the theory it assesses is that dissociation is not a generalized and global response but specifically tied to response to traumatic events. Consequently, clients who are "very dissociative" would have developed many different dissociative reactions in response to varied and probably multiple traumas. Severe traumas probably involve many of the background components posited by the current theory. By implication, individuals at the more severe end of the continuum should have experienced traumata of greater variety and severity.

Naturally occurring dissociation has not been studied, and understanding trauma-evoked and pathological dissociation must connect in some way to naturally occurring dissociation. Large numbers of the 90 non-traumatized subjects endorsed dissociative reactions. This is a phenomenon that requires explanation; an explanation that cannot readily be given on the basis of this research, and might begin to clarify dissociativity: dissociative potential (Kluft, 1984) or the predisposition to dissociate (Braun, 1985). This author proposes that the genetically-wired temperamental trait of distractibility (Thomas & Chess, 1977) is the hard-wired substrate for dissociativity. Highly distractible people would not be dissociative, according to this hypothesis. This is consistent with the hypothesis being tested in this research: namely, that inhibition of perception of the background leads to dissociation.

Two traumatic dissociative reactions, when compared to the frequency of non-traumatic dissociative reactions, showed significantly *decreased* frequency: objects appearing farther away than usual; and, while awake, of being in a dream-like state. When used to assess the hypotheses, these two reactions were always non-significant or significant in the wrong direction (six of the thirteen such results). Are these last two dissociative reactions in some way unique and reveal a different response to trauma? The data might imply that some traumas require people to focus more clearly on reality and not to dissociate. What are the traumatic conditions when this occurs?

Dissociative reactions rank order in frequency. Although the ordering only partly accorded with the original formulation of the theory (Table 2), psychologically simple dissociative reactions do seem to occur more frequently than more complex and psychologically demanding reactions. The orig-

TABLE 37
Number of Subjects Experiencing Pain During the Trauma Who Report, While Awake, Experiencing Themselves in a Dream

	Observed	Estimate
Yes	10	12.54
In a dream		
No	12	9.46

Chi square = 1.2, df = 1, p = .275

TABLE 38
Number of Subjects Experiencing Pain During the Trauma Who Report Losing the Sense of Their Own Reality

	Observed	Estimate
Yes	14	5.06
Lost sense of own reality		
No	8	16.94

Chi square = 20.51, df = 1, p = .000

TABLE 39
Number of Subjects Experiencing Pain During the Trauma Who Report Observing Mental Processes From Outside

	Observed	Estimate
Yes	7	4.62
Observe mental process		
No	15	17.38

Binomial test p = .09

TEST OF A THEORY OF DISSOCIATION

TABLE 40
Summary of Results

Hypothesis	Significance of results	Were results predicted by theory?
1. Restricting perception associated with dissociation	p<.01	Y
	n.s.	Y
2. Different traumas lead to different dissociative reactions	p<.0001	Y
3. Dissociative reactions rank order by complexity and demand	Supported	Y
4. Time slowing relates to anticipation of trauma, not suddenness.	p≈.04	Y
	p≈.211	Y
5. Time stopping relates to startling trauma.	p=.003	Y
6. Depersonalization pertains to unacceptable thoughts or emotions. (Assessed as: Depersonalization pertains to emotionality and not calm during trauma.)	p=.264	Y
	p≈.802	Y
	p≈.604	Y
	p≈.007	N
		“Strong feeling of unreality”
	p≈.131	Y
	p=.0007	Y
	p≈.000	Y
	p≈.002	Y
	p≈.000	Y
p≈.032	N	
	Opposite direction: “In a dream”	
7. Depersonalization pertains to anticipated trauma	p=.000	Y
	p=.004	Y
	p=.0003	Y
	p=.047	N
		Opposite direction: “In a dream”
	p=.022	Y

TABLE 40 – Continued
Summary of Results

Hypothesis	Significance of results	Were results predicted by theory?
8. Derealization pertains to startling trauma	p=.024	N
		Opposite direction: "Objects farther"
	p=.323	N
		Not significant: "Objects closer"
	p=.000	Y
	p=.019	Y
	p=.000	Y
	p=.062	N
		Not significant: "In a dream"
9. Disembodiment pertains to anticipated, not actual, bodily injury	p=.44	Y
	p=.032	Y
	p=.11	N
		Not significant: "Body not mine"
	p=.22	N
		Not significant: "Body unreal"
	p=.022	Y
10. Derealization pertains to bodily pain	p=.165	N
		Not significant: "Objects farther"
	p=.568	N
		Not significant: "Objects closer"
	p=.003	Y
	"Strong feeling unreality"	
	p=.268	N
		Not significant: "World unreal"
Post hoc 1. Pain does not pertain to disembodiment	p=.281	Y
	p=.131	Y
	p=.009	? "Body unreal"
	p=.009	? "Seeing body from outside"
Post hoc 2. Pain pertains to depersonalization	p=.275	N "In a dream"
	p=.003	Y* "Strong feeling unreality"
	p=.009	Y* "Body unreal"
	p=.009	Y* "Seeing body from outside"
	p=.000	Y
	p=.09	N
	Not significant: "Observing mental processes"	

* Listed twice since the reaction is also interpretable as a depersonalization reaction.

inal model has been modified based on the results of this research and is presented in Table 41.

Depersonalization during a trauma was associated with experiencing emotion, but not calmness or no emotion. These results are inconsistent with current thinking which would contend that dissociation is a defense against emotion during trauma. If being calm or unemotional were defensive, then greater dissociation would be expected while calm or unemotional. Contradicting this expectation, being calm or unemotional was not in general associated with depersonalization. Furthermore, for this sample of subjects, experiencing emotion during trauma and reacting dissociatively occurred together.

A two-fold sequence was proposed to explain dissociative reactions associated with emotionality during trauma. The first step in the sequence posits that being emotional guarantees perception of the body and, if sufficiently intense, results in depersonalization, and possibly derealization. This dissociative reaction would occur prior to and independent of the person being aware whether the emotion was acceptable or not. The unacceptability of the emotion is the second step of the two-fold sequence. If the emotion is unacceptable, it could lead to a second-step dissociative reaction in response to the emotion itself.

Methodology, Measures and Future Research

The results were not unambiguous. Some questionnaire items could be interpreted as relevant to several dissociative reactions and did not necessarily pinpoint aspects of the trauma specifically posited by the theory. In addition, a number of significant variables were not considered, such as duration of the trauma, its severity and the amount of the subjectively experienced threat associated with the trauma. Since this theory attempts to account for spontaneously occurring dissociative reactions at the time of the trauma, prolonged traumas, for example, will probably not fit this paradigm nor will consciously intended dissociative reactions. The hypothesized mechanism, inhibition of background perception, would be pertinent. Lastly, how dissociative reactions persist as dissociative symptoms was not considered.

Subjects report dissociative reactions when non-traumatized and during non-traumatic times. There was no significant difference in frequency of everyday dissociative reactions between traumatized and non-traumatized groups. These results require study in order to understand dissociative phenomena in general, their link to traumatic dissociative reactions and the relationship to dissociative symptomatology. How frequently do dissociative reactions occur during the day, week, month, or year. Furthermore, what are the circumstances associated with these dissociative reactions? Are traumatic and non-traumatic dissociative reactions of equivalent intensity and quality? Are non-traumatic dissociative reactions spontaneous or intentional?

The data were self-report and retrospective. It would be

useful to obtain data closer to the trauma so the time interval between the experience and recall is shorter. Data focused specifically on the theoretical issues raised here would be useful. Most noteworthy, from this author's point of view, is that the self-report and retrospective data fit the theoretical model so well.

As stated previously, the theory does not attempt to account for all dissociative reactions. Although many of the results are statistically significant, the results only account for a small amount of the variance. The inconsistencies might be due to the sample of subjects, the kinds of questions asked, or error variance. Nonetheless, it is reasonable to assume that those dissociative reactions which did not fit require reconceptualizing the theory.

This study isolated specific kinds of trauma since they were relevant to the predictions made by the theory. In part, the results are counter-intuitive. Thus, according to "traditional" views, bodily pain should lead to disembodiment. In contrast, this theory predicts the opposite; namely, that bodily pain would not necessarily lead to disembodiment but rather to depersonalization. Clearly, future research can isolate different characteristics of the trauma and discover what kinds of dissociative reactions ensue. For example, one might research severity of trauma or intensity of pain in relation to disembodiment, depersonalization and derealization. As hypothesized earlier, might less intense bodily pain lead to depersonalization while intense pain lead to disembodiment via another, possibly "hard-wired" process which "makes the body numb"?

Definition of Dissociation

The traditional approach to dissociation, based on its definition as a symptom, is to consider it a function of disintegration of various components which constitute consciousness, identity, or memory.

Unfortunately, there is not a good definition of dissociation. Dissociation is defined in *DSM-III-R* (1987) as a "disturbance or alteration in the normally integrative functions of identity, memory, or consciousness" (p. 269). This is a rough-and-ready clinical definition of dissociation that does not have a lot of empirical support. It arbitrarily limits dissociation to those areas of the brain concerned with identity, memory, and consciousness. (Ross, 1989, p. 86-87)

DSM-IV (1994) defines dissociation as "a disruption in the usually integrated functions of consciousness, memory, identity, or perception of the environment. The disturbance may be sudden or gradual, transient or chronic" (p. 766). This definition suffers the same difficulties detailed by Ross but improves by adding "perception of the environment" which is consistent with the current theory and research. Perhaps one of the difficulties with the above definitions is that they

TABLE 41
Revised Hypothetical Characteristics of External Precipitants Evoking Specific Dissociative Reactions

Complexity/ Demand	Dissociative Reaction or Symptomatology	Background Component Lost/Changed	Perceptual Focus
Most	Alter self: MPD or fugue	Loss of "I": Self as actor or intender	1. Forced, horrific acts 2. Horrific intentions
	Disembodiment	Loss of body	1. Anticipated bodily injury 2. Anticipated trauma 3. Immobilization 4. Massive external threat 5. Startling, intense pain
	Detemporalization	1. Time stops 2. Time speeds up	1. Sudden, intense trauma 2. Non-specific and non-startling threat
Moderate	Derealization	Loss of world	1. Perception to the mind 2. Startling trauma 3. Strong emotion
	Depersonalization	Loss of mind: Self as experiencer of self	1. Strong emotions 2. World threat 3. Bodily pain 4. Anticipated threat
Least	Detemporalization	1. Time slows	1. Trauma extends over time; anticipation of trauma
		2. Time loss	2. Determinants unclear

focus on symptoms which contribute to the diagnosis of a mental disorder while dissociation covers a range of experiences, many of which are non-pathological.

The focus on pathological dissociation is central to other definitions. Putnam (1993) differentiates definitions of dissociation into two kinds: "a psychophysiological process occurring on a continuum that produces a disturbance in the integration of information and identity" (p. 80) ranging from normal to pathological; and "as a special state of consciousness in which information and events that would ordinarily

or logically be associated are divided from one another" (p. 80), as in alter personalities. Putnam (1993) includes non-symptomatic dissociation in his discussion, but his focus is on dissociative symptoms. Although research with the DES reveals a distribution of dissociative experiences in the normal population (Ross, 1991), Carlson & Putnam (1993) point out that the DES was designed to assess dissociation in clinical populations. In addition, Steinberg's (1993) SCID-D is designed to provide reliable diagnoses of dissociative disorders. As stated by Ross (1989) there is no adequate defini-

tion which fits the whole range of dissociation.

Possibly the only definition which begins to include the wide range of phenomena found in dissociation is Braun's (1984). Referring to Janet, he defined dissociation as severing "the association of one thing from another" (p. 171). Braun's definition hinges on the associative quality of memory: associated things are remembered; disassociated things are not. Memory loss, as specified in the earlier definitions, is an explicit outcome of some kinds of dissociation and, consequently, can be a significant symptom of dissociation. The perceptual theory of dissociation, however, places memory in a new context — namely, as a later artifact of an original dissociative perception. Consequently, one significant issue for research is the relationship between the dissociative reaction and later memory loss. On the one hand, one might wonder whether memory loss is an artifact of an experience never having been perceived. On the other hand, were the lost memory retrieved, how was the experience perceived during the dissociation? And what kind of dissociative reaction was experienced that led to the memory loss? Furthermore, might the dissociation and memory loss both stem from the trauma but otherwise be unrelated?

Connecting back to the *DSM-III-R* (1987) and *DSM-IV* (1994) definitions, the most recent definition is an improvement by including perception. However, both definitions emphasize mental events: consciousness, identity, and memory. In the context of the present research, mental events are intimately linked to perception of the environment. As argued elsewhere (Beere, in press) perception integrates mind, body and world. To focus solely on the mind or states of consciousness is to miss the relationship of mind to world captured during perception. More stringently, mind can never be found in isolation from world. Furthermore, all experience is perceptual. By shifting away from solely mental phenomena or solely behavioral observations and examining the perceptual experience which links both, we have been able to isolate particular facets of the dissociative reaction. Clearly examining perception seems to be a desirable way to proceed in studying dissociative symptomatology. Furthermore, perception might be the most important concept in arriving at a more workable definition.

In the context of this discussion, it might be useful to reiterate distinctions made elsewhere (Beere, in press). Dissociation needs to be differentiated into the kinds of phenomena discussed here. *Dissociative experience* is defined as the experience of any dissociation-like experiences which are non-pathological and non-traumatic. Normative or non-pathological dissociation would fall in this category. *Dissociative reaction* is defined as a dissociative experience during and in response to a trauma. *Dissociative symptom* is defined as an enduring or repeated dissociative experience when no apparent trauma is occurring.

A new definition of dissociation based on the structure of experience might be more inclusive and yet maintain all

of the previous elements. Thus, dissociation can be defined as an alteration in the unity of experience such that "I," mind, body, world, or time are not integrated into the background. Memory loss becomes a loss of time.

Alter Formation

It should perhaps be obvious that time slowing and the creation of an alter self are profoundly different psychological events. Little attention has been paid to more elemental dissociative processes. An adequate theory of complex dissociative phenomena will probably need to connect more immediate and relatively simple dissociative phenomena to severe and ongoing dissociative symptoms. Scant research or theory has considered these issues.

Although data relevant to alter formation were not gathered, some preliminary conclusions can be ventured. Three phenomena frequently associated with alters are amnesia, "seeing" one alter outside the body or "seeing" the body from the outside, and an alter having a different body from the host. Although time loss (apparent amnesia) is a frequently occurring dissociative reaction during non-traumatic times (43% report this experience), seeing the body from the outside was one of the least frequently reported dissociative reactions even during trauma. In addition, disembodiment was the least frequently occurring kind of dissociative reaction. Except for time loss, these dissociative reactions were the least frequent. In other words, during certain kinds of trauma, the more intense and severe according to the present research, these dissociative reactions might cluster together to facilitate the formation of an alter. That alter formation seems to involve a loss of or change in volition was not considered in this research.

Function of Dissociation

Dissociation functions, according to the more traditional view, to defend the person against severe trauma. The present research and the theory on which it rests points out that dissociative reactions during trauma are spontaneous perceptual processes. Furthermore, in contrast to traditional theory, dissociative reactions during trauma arise not as a defense against threat or trauma but due to perception of that threat or trauma. This is not to claim that dissociation is not or cannot be used as a defense. Furthermore, during the trauma, issues of memory and identity are secondary. Changes in identity and memory are sequelae which stem from original dissociative reactions although no theoretical links have been made here. As mentioned above, a significant question pertains to the relationship between the dissociative reaction and later amnesia.

It is this author's belief that later dissociative symptomatology is a perceptual response, learned at the time of trauma and persisting post trauma. Thus, children who are severely punished learn to perceive dissociatively and this persists as a learned perceptual style we label dissociative symptomatology. Precisely how punishment in childhood

and severe trauma in adulthood lead to perceptual learning remains to be determined. It is possible that the same process of perceptual learning is involved in both. In addition, some dissociative reactions persist post trauma and gradually lessen. Others persist as symptoms. Clarifying the conditions under which dissociative reactions become dissociative symptoms might begin to isolate what is necessary for the dissociative reaction to persist as a symptom. ■

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APPENDIX

THE TS QUESTIONNAIRE

AGE _____ SEX _____

A **TRAUMA** is a psychologically distressing event outside the range of usual experience (outside the usual experiences of grief, chronic illness, business loss, or marital conflict). It would be markedly distressing to anyone and is experienced with intense fear, terror and helplessness. Most common are a serious threat to life or physical wholeness; serious threat or harm to children, spouse, loved one, close relatives, or friends; sudden destruction of home or community; or seeing another person who has recently been, or is being, seriously injured or killed as the result of an accident or physical violence.

Yes No Have you ever been **traumatized**? If so, **how many times?** _____

People have the following experiences sometimes during a trauma and sometimes when nothing out of the ordinary has happened. Please answer the following questions for times when **YOU WERE NOT UNDER THE INFLUENCE OF DRUGS OR ALCOHOL**.

During a Trauma		Have You Ever Experienced	Any Other Time	
Yes	No		Yes	No
<input type="checkbox"/>	<input type="checkbox"/>	1. Time slow down.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	2. Time speed up.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	3. Time stop.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4. Loss of time. Find gaps in your experience of time.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	5. Objects appear farther away than usual.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	6. Objects appear closer than usual.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	7. "See" yourself from outside your body.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	8. Feet, hands or other body parts seem to change size.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	9. Observe your mental processes as if from the outside.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	10. Have a strong feeling of unreality.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	11. Lose the sense of your own reality.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	12. While awake, experience yourself dreaming or in a dream.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	13. Experience your body as not belonging to you.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	14. Experience your body as unreal.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	15. Experience the world as unreal.	<input type="checkbox"/>	<input type="checkbox"/>

During a trauma, did you ever experience **ONLY ONE OF THE ABOVE?** (For example, just feeling unreal and nothing else.) If so, please **star (*)** any individual experience which occurred **by itself** during a trauma. (You can star as many as applicable.)

Sometimes people continue having the above experiences after a trauma, sometimes they do not, and sometimes they have different experiences. Using the numbers 1-15 from the above list, please enter the appropriate numbers below.

The numbers of experiences that continued after a trauma _____

The numbers of experiences that were different after the trauma _____

Briefly, what was the trauma you experienced? _____

What were you aware of during the worst of the trauma? _____

Did you ignore certain aspects of the situation? What? _____

	Yes	No	Not Relevant
If, <u>during non-traumatic times</u> , you've had some of the above 15 experiences, did this begin after you experienced a trauma?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During a trauma, were you aware of a single sensory modality (say, sight) while being totally unaware of any other sensory modality (say, sound and touch)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the trauma sudden and startling (like an unexpected explosion)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the trauma one which you could "see coming" (like a boating accident that takes five minutes to happen)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Before the traumatic situation started, did you expect to get physically hurt?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were you physically hurt?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were you in pain during the trauma?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were you in pain following the trauma?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you did not have a <u>head injury</u> , are there details of the traumatic events for which you have <u>no memory</u> even after reminders?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During the trauma, were you calm or unemotional?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During the trauma, were you emotional?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TEST OF A THEORY OF DISSOCIATION

	Yes	No	Not Relevant
During the trauma, were you calm or unemotional and then became emotional after it was over?			
What was the emotion? _____			
How long did it last after the trauma? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
While dreaming, do you see your body from the outside?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
While dreaming, do you "see" as you do when awake, from inside your head or from behind your eyes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have difficulty waking up from dreams or nightmares?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you wonder if your dreams are real?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you have nightmares, is it the same one or ones over and over?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are your nightmares about a real trauma?			
Do you have nightmares? <input type="checkbox"/> Never <input type="checkbox"/> Seldom <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Nightly			

In the space below, please describe anything else about the trauma that you feel is significant.

If you are willing to write a description of a traumatic experience, please leave your name, address and phone number. Thank you.