

CHAPTER 19

Posttraumatic Stress Disorder

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DESCRIPTION OF THE DISORDER

TRAUMATIC EVENTS AS defined in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association [APA], 1994)* include experiences that involve "actual or threatened death or serious injury, or a threat to the physical integrity of self or others," and that evoke intense fear, helplessness, or horror (p. 424). The diagnosis of posttraumatic stress disorder (PTSD) is used to classify individuals who have experienced such a traumatic event and endorse at least (1) one trauma-related reexperiencing symptom, (2) three trauma-relevant forms of avoidant behavior, and (3) two symptoms of increased arousal following the event. Although these diagnostic criteria are the same for adults and children, manifestations of symptoms may differ. In the case of young children, disorganized or agitated behavior may appear more prevalent than articulated expressions of fear and helplessness. The diagnostic criteria also specify that nightmares are not required to include recognizable trauma-related content (e.g., monsters) to be considered a reexperiencing symptom among children. Although not included as diagnostic requirements, many clinicians and researchers have noted that trauma-exposed children may exhibit behavioral regression, such as bed-wetting, refusal to sleep alone at night, and difficulty separating from their parents during the day (Perrin, Smith, & Yule, 2000; Saigh, Yasik, Sack, & Koplewicz, 1999).

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Additionally, a substantial body of literature indicates increased risk for psychopathology among children who have experienced traumatic events. Risk for major depression, panic disorder, overanxious disorder, social phobia, and somatoform pain appears to be elevated among trauma-exposed children and adolescents (see review by Saigh et al., 1999). Among children, attention problems (including attention-deficit/hyperactivity disorder) and disruptive behavior (e.g., oppositional defiant disorder and conduct disorder) also have been found to increase following exposure to traumatic events (Saigh et al.).

Several important variables that may mediate or moderate outcomes following trauma exposure have been identified in the literature (Saigh et al., 1999). The greater the perception of threat to one's safety or body integrity, the higher the likelihood that one will experience symptoms of PTSD. Thus, events resulting in physical injury have a higher association with PTSD. Furthermore, the more traumatic events an individual has experienced, the greater the likelihood for PTSD, suggesting a cumulative stressor effect. Degree of social (particularly parental) support following the traumatic event plays a significant role in long-term adjustment, as does the degree of parental psychopathology.

A number of these important child variants of PTSD symptoms, comorbidities, and protective and risk factors are evident in the present case example of PTSD in a child following a motor vehicle accident.

CASE DESCRIPTION

The reader might ask why we have chosen to focus on the aftereffects of a motor vehicle accident (MVA) as a case example of PTSD in a child. The reason is simple: MVAs are exceedingly common events, but often are not considered potentially traumatic events that may lead to PTSD and a host of related psychological symptoms and disorders (e.g., phobias, withdrawal, and other anxiety-related symptoms; depression). Of the 6.8 million motor vehicle crashes in the United States in 1996, approximately one-third (2.3 million) resulted in physical injury to at least one person, and about one percent resulted in the death of at least one person (U.S. Department of Transportation, 1996). These injury figures include some 413,000 children age 15 years and under and 953,000 youth age 16 to 24 years. These latter figures are the reported *physical* injuries from motor vehicle crashes in just one year; they do *not* include the psychological distress that may follow involvement in an MVA. It is this psychological and behavioral distress that is the focus of the present case study.

THE ACCIDENT

As an essential feature in the diagnosis of PTSD is occurrence of a traumatic event, we begin with an overview of the MVA. Keisha, age 3 years, and Terry, age 9, were both in an accident three months prior to their initial presentation at the clinic. Keisha and Terry were backseat passengers in a car that their 35-year-old mother, Mrs. Washington, was driving on a wet road with many sharp turns. A pickup truck was driving uncomfortably close behind them, such that when Mrs. Washington hit the brakes on a sudden sharp turn, the truck hit their rear bumper, sending them off the road, skidding and then coming to a stop in a ditch. The mother's arm was caught between the front seat and the door for some 20

minutes until help arrived. Mrs. Washington's face and arms were dotted with multiple minor pinpoint cuts caused by flying glass from the shattered windshield. Rain poured in as Mrs. Washington sat pinned and blood flowed from her seemingly serious head wounds. Both children screamed in distress until help arrived. Keisha appeared uninjured. Terry had apparently bumped his head on the window of the side door, receiving a rather large swollen bruise on his forehead, but no lacerations. A trip to the hospital via ambulance revealed that all of the injuries were quite minor and would quickly heal.

THE FAMILY

Background variables are critical features of any case presenting for assessment and treatment, but never more so than in the case of current family dynamics when the clients are young children (see Scotti & Morris, 2000). In this African American family, the mother had been born in South Africa but had been in the United States for over 10 years. Mrs. Washington was not working outside the home. She was seen as very submissive—even passive—especially when her husband, a native of the United States, was present. Mr. Washington, a medical researcher, seemed annoyed by the damage to the vehicle but rather unconcerned, even dismissive, about the continuing distress of his family (he came to only one session). The family was devoutly Christian. Terry attended a church-affiliated school as well as multiple afterschool church-run activities (e.g., bible study and youth groups several times per week). An important feature of this case was the perspective, voiced primarily by Mrs. Washington, that God had played a role in allowing the accident; thus, in her view, prayer and faith would be important aspects of resolving the distress of her children. She was rather unconcerned about herself, although it became evident that she had the most serious symptoms of all involved. The case raises a number of important cultural and ethnic issues that need to be incorporated into the case conceptualization (see Rabalais, Ruggiero, & Scotti, in press).

CHIEF COMPLAINTS

As is often the situation with cases that involve children and, as a result, their families, the presenting complaints did not cover fully what eventually became the behavioral and psychological symptoms that were treated. First, Mrs. Washington denied much distress for herself; however, discussion and a subsequent structured interview with the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1990) showed her to be fully meeting criteria for moderate PTSD as a result of this MVA, as well as a history of anxiety and depression. In separate sessions, the mother was subsequently treated with implosive therapy, an imaginal exposure technique that is an empirically-validated intervention for PTSD (Chambless et al., 1998; see Lyons & Scotti, 1995, and Westrup, Kalish, & Scotti, 1997, for case examples of treating adults with MVA-related PTSD with implosive therapy). Work with Mrs. Washington focused on her symptoms of PTSD, but also her guilt concerning her perception of having caused the accident that led to the current distress of her children. This work, as often happens, led to her revelation of a history of childhood physical abuse and sporadic domestic violence, additional issues then addressed in continuing therapy.

Mrs. Washington reported that, as a result of the accident, both of the children showed signs of distress whenever she was the driver. This was especially the case in rainy weather. However, when the father drove the car, the children were quiet and well behaved. Mrs. Washington noted that Terry was now reluctant to get into a car and that he appeared restless and "fidgety" when riding with her. Of particular concern to her was that Terry now often criticized her driving, frequently exhorting her to be careful. She found this to be distracting, and she worried that it might result in another accident. Of concern to the father was that Terry was coming into the parental bed at night, a "habit" they thought they had "broken" several years earlier.

HISTORY

The history of the problems related to this MVA is a rather brief one, given that the disorder—PTSD, in the case of Terry—stems from the time of the accident, just three months prior to the initial clinical session.

Keisha was reported to have been distressed the evening of the MVA and had some difficulty falling asleep. She also asked her mother several times about the "boo-boos" on her face, but seemed unconcerned when given an honest answer. By the time of our initial sessions, three months postaccident, Keisha seemed to have little to no memory of the accident. She said that she did not remember it, and we had to act on the basis of her self-report. It should be noted that Keisha displayed distressed behavior similar to Terry's when in a car with both her mother and brother. This might suggest a memory for the event when sufficient reminders are present (i.e., car, mother, and brother). However, Keisha's behavior appeared related more to the distressed behavior of her brother; she did not act distressed when in a car alone with her mother or when her father was driving. The operative component appeared to be the agitated behavior of her brother, in response to which she would cry.

Keisha's situation raises the issue of whether one must be able to describe events verbally to be affected by them. Scotti, Ruggiero, and Rabalais (in press) provide a brief overview of work in this area, noting issues such as the apparent difference in the organization and experience of memory in younger versus older children, as revealed through event narratives; the fall-off in recall accuracy over time (as with any memory); and differences in recall accuracy related to age (even between 3- and 4-year-old children). Memory for a traumatic event is a developmental issue, which likely interacts with the characteristics of the event and subsequent psychological vulnerabilities and symptom presentation. For example, Bahrack, Parker, Fivush, and Levitt (1998) found that 3-year-old children reported fewer details than 4-year-old children about their experience of Hurricane Andrew. Additionally, they found that more details were recalled by children who had a moderate level of exposure to the hurricane, as compared to those children with either high or low levels of exposure. Thus, given her age, the mild to moderate severity of the MVA, no prior history of psychopathology, and only intermittent distress that was more likely occasioned by Terry's distress, it is not surprising that Keisha was not able to describe the accident. Thus, after the first two sessions, Keisha was no longer involved in further assessment or therapy sessions.

Terry, on the other hand, slept very poorly for several nights after the accident and appeared fitful in his sleep thereafter. He complained of head and neck pain

for several weeks, requiring further medical evaluation (which did not reveal a cause for continuing reports of pain). He became increasingly resistant to entering the family car; he had no difficulty with the school bus. When coaxed with promises of special treats to ride in the car, he was hypervigilant, looking for pickup trucks and sharp bends in the road, and he became distressed by sudden changes in the speed or direction of the vehicle. His distress was evident by yelling out, crying, and general restlessness in the backseat, all of which appeared upsetting to his sister when she was present. He was also highly critical of his mother's driving, making repeated remarks for her to be careful and to keep both hands on the steering wheel at all times (what we refer to as "safety" behaviors). Mrs. Washington alternately complied with his requests and snapped at him to be quiet so that she did not have an accident, mention of which served only to distress him further. None of this behavior was evident when the father was driving the car. Terry reported being quite tense when his father drove, but said that his father would punish him if he and Keisha were not quiet and still, both in the car and generally. (Follow-up on the father's behavior suggested very strict and stern family rules consistent with some stated cultural and religious beliefs, but not to the point of abusive behavior against the children.) By the time of the initial sessions, Mrs. Washington was just beginning to receive written reports from school that Terry was daydreaming in class and not performing academically at his usual high level.

BEHAVIORAL ASSESSMENT

This case was initially seen in response to an advertisement to participate in a grant-funded research project concerning the effects of MVAs on children. Thus, the assessment package was rather more extensive than might usually be possible in the typical clinical setting. Still, the assessment reported here well demonstrates the range of methods that can be used in the assessment of PTSD.

BEHAVIORAL

The information obtained through an unstructured interview on the behavioral features of this case has already been provided in the prior two sections. Additionally, we note the extraordinarily well-behaved and well-mannered behavior of the two children, noteworthy in that it appeared stifled and uncomfortable. Although very pleasant children, ready to talk, play, and otherwise interact with the examiners, they appeared anxious about making mistakes or offending (Terry more so than Keisha), especially in the presence of the father.

As part of the research protocol, Terry completed the *Clinical Stroop Task*. In its original format, the Stroop (1935) color-naming task required naming—as fast and accurately as possible—five different colored inks in which a set of five color names are printed; the color name and the color of the ink in which it is printed are different (e.g., when seeing the word "GREEN" printed in blue ink, the person is to say "blue"). The Clinical Stroop Task involves use of trauma-relevant words printed in different colors; again, the task is to ignore the word and say the color of the ink. In our MVA-relevant Stroop Task, the participant sees the word "ACCIDENT" printed in red ink, for example, and is required to say "red" and ignore the word "ACCIDENT." The rather consistent finding in Clinical Stroop

studies is that persons who are both trauma-exposed and distressed (as compared to nondistressed trauma survivors and a nontrauma control group) take significantly longer to complete this task with trauma-relevant words as compared to either stressful (but non-trauma-relevant) or neutral words. This "Stroop effect" is most often accounted for by differences in information processing or selective attention, but we have more parsimoniously conceptualized the effect as behavioral disruption due to conditioned emotional responses (Mullen James, 1999; Scotti, 1992; see Scotti et al., in press, for a review of the Clinical Stroop used with children). As a measure of behavioral disruption, this task is a suitable means of directly observing the effects of the presence of trauma-relevant (i.e., MVA-related) word stimuli on children exposed to MVAs, capturing such features of PTSD as distractibility and concentration difficulties, arousal to event-related cues, and hypervigilance.

At present, the Clinical Stroop Task should be considered a research tool rather than a validated and normed clinical assessment instrument. Thus, we report results of the MVA-related Stroop completed with Terry with due caution. In completing the Clinical Stroop Task, Terry accurately named the colors on the three cards (each containing 50 words) with neutral words (e.g., "POTATO") and one card with school-stress words (e.g., "TEST") all within 5 seconds of each other (an average of 63 seconds across the four cards). However, the card with MVA-related words (e.g., "SEATBELT") took him 25 seconds longer than any of the other cards, and he made multiple mistakes, saying the word (e.g., "CRASH") rather than the ink color (i.e., "blue"). In and of itself, the pretreatment results are not meaningful. They acquire meaning when compared to his posttreatment results, presented later, and when compared to the other children in our research study. He responded similarly (both in terms of time and errors) to children who had been in mild to severe MVAs and were clinically distressed.

SELF-REPORT

In performing a psychological assessment of Terry, we used several self-report measures and interviews focusing on PTSD, anxiety disorders in general, and depression, which often accompanies PTSD. It is also critical with young children to gather information about the parents and the social and family environment, as there is a substantial literature demonstrating the detrimental effects of parental psychopathology on child functioning, and one needs to know about family resources and whether the family functions as a support or an additional stressor for the child.

Thus, the Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1983) was completed by Mrs. Washington about herself. The SCL-90-R showed clinical elevations (above a T-score of 60) on the Obsessive-Compulsive, Anxiety, Depression, and Hostility subscales, as well as the Global Severity Index (follow-up testing after her course of therapy revealed an elevation on only the Obsessive-Compulsive subscale, with a Global Severity Index in the normal range).

Both Terry and Mrs. Washington independently completed the AccIdentS (Accident Characteristics Identification Scale; see Scotti et al., in press), which identifies important features of the MVA (e.g., damage to vehicle, type of collision, extent of injury). Both mother and son rated the MVA in the mild to moderate range, reporting a moderate amount of fear of being injured or killed at the time of the accident, and continuing fear (by Terry) of riding in cars.

The Child Behavior Checklist (CBCL; Achenbach, 1991), completed by Mrs. Washington about Terry, revealed clinical elevations (above a T-score of 65 and ranging as high as 75) on the Internalizing Scale (and all related subscales: Withdrawn, Somatic Complaints, and Anxious/Depressed), as well as Social Problems, Thought Problems, and Attention Problems. There were no elevations on any of the Externalizing scales. In completing the child self-report measures, Terry did not indicate depression (Children's Depression Inventory [CDI]; Kovacs, 1985), but did reveal clinically significant anxiety (Revised Children's Manifest Anxiety Scale [RCMAS]; Reynolds, 1980), including the subscales of Physiological Anxiety, Worry and Oversensitivity, and Concentration Anxiety. Of most relevance to the issue of PTSD, Terry's score on the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979) was in the PTSD range, with high levels of both intrusive and avoidant symptoms. Finally, Terry completed the Social Support Scale for Children ("People in My Life"; Harter, 1985), the scores on which were over half a standard deviation above the mean on all subscales (Friend, Classmate, Parent, and Teacher). Thus, Terry reported strong social support, an important factor related to positive outcome in cases of PTSD.

As a final step in this part of the evaluation, both mother and son separately completed the parent and child versions of the Anxiety Disorders Interview Schedule for Children (ADIS; Silverman & Nelles, 1988). Terry's report indicated that he currently met criteria for both separation anxiety (with onset postaccident) and generalized anxiety disorder (GAD; formerly overanxious disorder of childhood, with Terry's concerns being primarily oriented to social and school failure, and having an onset prior to the MVA), as well as PTSD. With regard to PTSD, his most prominent symptoms were those of reexperiencing. Terry indicated that he often thought of car accidents. He denied dreaming of accidents, but did report repetitive play in which he made cars crash into each other (this being a change from prior behavior). He also reported feeling like the accident was happening again, especially when there was any sudden change in the speed or direction of the vehicle in which he was riding. Seeing pickup trucks or fast-moving cars resulted in increased arousal (e.g., heart pounding, hard to breathe). Terry indicated that he did not like to talk or think about accidents; however, he noted that when riding with his mother he spoke frequently of them, warning her of dangers and criticizing her driving. He described how he did not want to get into the family car, especially when his mother was driving, and that he was not as interested in previously enjoyed afterschool activities (in part, it seemed, because staying after school meant that his mother would pick him up in her car, rather than his taking the bus home). Finally, he reported that he was hypervigilant to accident-related cues, was easily startled by loud noises and changes in movement, was having difficulty concentrating on his schoolwork, and was generally more irritable and sleeping fitfully. The mother's report on the ADIS corroborated Terry's reported symptoms of GAD (also noted to be prior to the MVA) and PTSD; she did not see his symptoms of separation anxiety.

Both mother and son agreed that the symptoms of GAD preceded the MVA by several years, indicating a possible predisposing factor. (It is important to define the time course of GAD symptoms as they would otherwise be better accounted for by PTSD if they began after the accident.) Both also admitted, for the first time, when queried during the interview, that Terry had begun wetting the bed at night within a week of the accident (regressive behavior); he met full criteria for nocturnal enuresis.

PHYSIOLOGICAL

In addition to the self-reports that clearly indicate increased physiological arousal, we employed two additional methods for evaluating arousal to trauma-related stimuli. The first is feasible in the typical clinical setting; the second involves rather more extensive experience and specialized equipment. Both, in this case, were completed within our laboratory research protocol.

We first had Terry listen to six brief audiotaped vignettes, two of which described neutral to pleasant activities (a birthday party and a trip to the mall), two that described potentially stressful events at school (forgetting to study for a test and giving an oral report), and two that described a mild and a more severe MVA; the order of the six scenes was randomized. At the midpoint and end of each vignette, Terry rated on a 4-point scale how fearful and how happy the scene made him feel. One school scene (oral report) and both MVA scenes produced ratings of "very fearful" and "not at all happy." All other scenes were rated as "very happy" and "not at all fearful."

Following this, Terry participated in a psychophysiological assessment protocol during which he listened to more extended and more vivid audiotaped vignettes of a pleasant scene (start of summer vacation), a school-stress scene (forgetting to study for a test), and an MVA in which minor injury occurred (in fact, a scene coincidentally quite similar to his own accident). During these scenes and appropriate baseline conditions, heart rate and skin conductance data were continuously recorded. Analyses of these physiological data showed Terry to be responding differentially, with increased heart rate and skin conductance, to the MVA scene in a manner consistent with the group of children in this study who had experienced mild to severe accidents and were displaying symptoms of PTSD (see Scotti et al., in press). His pattern of responding was clearly discriminable from the two control groups: children who had not been in an MVA, and children who had been in an MVA but were not displaying symptoms of PTSD or other distress.

SUMMARY

The multiple methods and sources of information across three response channels (overt behavior, cognition/covert behavior, physiology) were all highly congruent in pointing to responses consistent with a diagnosis of PTSD, with related symptoms of separation anxiety, along with a preaccident history of GAD.

MEDICAL CONSULTATION

As previously noted, the family was transported from the accident scene to the emergency room of a local hospital, where the injuries were described as minor. Hospitalization was not required. Terry, however, reported head and neck pain for several weeks after the accident. Further medical evaluation failed to reveal any significant injury beyond the soreness associated with whiplash. It is critical, however, in the comprehensive assessment and treatment of MVA survivors, that such head injury-related symptoms be thoroughly investigated. An interesting aspect of MVAs that involve a head injury is that the symptoms of PTSD and head injury show considerable overlap, including difficulties with attention and

concentration, irritability, loss of interest, sleep disturbance, and anxiety seen in this case, but also memory problems, emotional lability, disinhibited behavior, social avoidance, depression, and fatigue (Davidoff, Laibstain, Kessler, & Mark, 1988; Horton, 1993; Jacobson, 1999; Scotti et al., 1992). The time course of symptoms associated with head injury and PTSD is somewhat different. The symptoms of mild postconcussive head injury are typically of a relatively brief duration, occurring within hours of the event and continuing for several weeks to months. Symptoms of PTSD, on the other hand, by definition have onset after one month (although one may also show signs of acute stress disorder). When the head injury is more severe and thus more extended in time, these differences can easily become blurred (Davidoff et al.). Furthermore, what the lasting effects of even a mild head injury may be on children are largely unknown (Satz et al., 1997). Consequently, it is strongly advised that the clinician who is assessing and treating an MVA survivor ensures that a medical evaluation has been completed, particularly when the client reports any physical injury to the head during the accident. In Terry's case, medical evaluation did not suggest the lingering effects of a head injury (see Scotti et al., in press, for further discussion of this issue as well as the problem of postconcussive amnesia). Additionally, after consultation with the family's personal physician, it was decided that anxiolytic medications would not be prescribed unless therapy was unsuccessful.

CASE CONCEPTUALIZATION

In conceptualizing this case, we applied the integrated *paradigmatic behavioral framework model*, as developed by Arthur Staats and colleagues (Eifert, Beach, & Wilson, 1998; Eifert & Evans, 1990; Staats, 1993) and expanded for application with accident survivors by Scotti and colleagues (Scotti, Beach, Northrop, Rode, & Forsyth, 1995/in press; Scotti et al., in press). Space does not allow a full explication of that conceptual model here; instead, we briefly outline each of the components of the model as we discuss the relevant details of this case and bring the components together into a full clinical functional analysis. The purpose of such a model is to fully integrate the multiple interrelated factors that both set the occasion for and maintain the adaptive and maladaptive responses seen in a clinical case. The framework is a dynamic one that outlines not only the critical variables, but their back-and-forth interplay that results in a case conceptualization with sufficient flexibility to incorporate idiographic differences within a comprehensive framework based on empirical research. Such an analysis assists in the identification of appropriate intervention strategies, as the subsequent section on intervention demonstrates.

ORIGINAL LEARNING (HISTORICAL ANTECEDENTS)

This component of the model represents the individual's learning history prior to the event of interest, in this case, the MVA. Factors of importance include age and developmental history; history of prior trauma; the cohesiveness of the family; education (grade level and achievement); socioeconomic status (as this may reflect family resources available in treatment); ethnic and cultural background; history of psychopathology (child and family); and coping skills. A great deal of this information is gathered in the typical initial clinical interview

and information-gathering phase of the assessment, some of which has already been noted. Terry's history was noteworthy only for his symptoms of GAD and for enuresis that continued past the age at which bed-wetting typically ceases for males (see Scotti & Morris, 2000). We initially suspected that there may have been some episodes of sexual abuse because an uncle who lived in Terry's home for a short while was incarcerated for molesting his own 10-year-old daughter; such abuse was denied by Terry and his mother, as were any other traumatic events or serious accidents. Additionally, we investigated suspected physical abuse by the father, as already noted. Thus, we are presented with a child from a middle-class family, with good to excellent educational achievement prior to the MVA, excellent verbal skills (important to our gathering of information and his understanding of the procedures that we eventually used), and a problem-oriented coping style (he was much more interested in what he could do, versus focusing on how he felt).

Very little is known about the relation between aspects of ethnicity and culture and the response to trauma, especially in the case of accidents (Rabalais et al., in press). Thus, it was tempting to consider how the family's religiosity and African American ethnic tradition might contribute as either risk or protective factors in this case. The father's stern manner and expectations of the children could not be attributed specifically to either ethnic background or cultural factors, although it was clearly an important contributor to the expression of trauma-related fears in Terry and Keisha. More critical was the mother's religious perspective of rather passively "leaving it up to God" to resolve the current situation, her most active role being that of daily prayer.

UNLEARNED/GENETIC BIOLOGICAL VULNERABILITY

In the paradigmatic model, this component focuses on genetically based inherited characteristics and biological differences that might play a role in the development of a disorder and thus its treatment. In the case of Terry, it became evident that his mother was quite anxious with her own history of anxiety and depression, including PTSD from the accident at the time of initial presentation. One might speculate that Terry's own history of anxious concerns, especially of somatic complaints, and GAD were related to this family history and thus a predisposing factor in his responding to the MVA with diagnosable PTSD and separation anxiety. Whether this was a biological predisposition (e.g., high autonomic arousal and reactivity, "conditionability") or the result of the mother's modeling anxious behavior and the father's being stern and punitive cannot be known for certain. However, incorporating a possible biological/genetic predisposition into the case conceptualization served to keep us aware that anxiolytic medication might be a useful adjunct to our behavioral intervention, especially if that intervention proved less than fully successful.

A related component of the paradigmatic model is that of *acquired/learned* biological vulnerabilities, such as changes in neurotransmitter and hormonal levels and increased baseline autonomic arousal, particularly in response to extensive physical or brain injury, long-term exposure to trauma, or an extended period between trauma and treatment. This component was considered in the functional analysis; however, due to the very minor physical injuries, lack of evidence of

brain trauma, and the short time since the accident, it was seen as not presently relevant in Terry's case.

THE ACCIDENT: TRAUMA LEARNING AND CHARACTERISTICS

This component captures the features of the MVA, the degree of exposure, and the individual's role in it (e.g., active versus passive), features that are included in the overall rating of severity on the Accidents. This MVA might be considered sudden, although somewhat predictable under the circumstances (i.e., being tailgated on a wet, winding road). Although the car was totaled and Mrs. Washington at first appeared severely injured, all three of the passengers quickly recovered from their injuries. However, the children felt quite helpless in the minutes after the accident when they could do nothing to assist their mother. Mr. Washington blamed his wife for the accident (although he could not know the details, as he was not present), adding to her own feelings of responsibility. In a way, Terry also held her responsible; he never said this directly, but his actions and statements when she drove clearly revealed his concern over her driving leading to further accidents.

A critical aspect in this component of the model is those stimuli that have come to be associated with the MVA. In this case, rain, wet roads, sharp turns or sudden movements of the vehicle, squealing brakes, loud noises, and his mother driving were all considered classically conditioned stimuli that subsequently produced arousal (conditioned response) and active (operant) avoidance in Terry.

PRESENT SITUATIONAL FACTORS

Critical elements of this component of the model include presence of MVA-related stimuli and situational factors, including behavioral contingencies and social and family support. As noted, Terry was quite aroused, even fearful, in the presence of accident-related stimuli. It is noteworthy that his arousal and active avoidance were differentially displayed in the presence of his father (with or without his mother) versus when alone with his mother. Terry essentially "suffered in silence" when in a car with his father. One might ask why rides with his father did not then extinguish his conditioned fear response and avoidance behavior. We surmise that continuing discomfort, even fear, in the presence of his father was sufficient to maintain arousal and thus prevent extinction. Additionally, trips with the father were much less frequent than with the mother, and nearly all trips since the accident had been brief. On the positive side of the equation, Terry felt that he had excellent social and familial support, despite the evident strain related to his father's stern behavior, and school (including extracurricular activities) was typically not seen as stressful for him. Thus, the present situational stressors in Terry's life were highly focused around the accident itself.

PSYCHOLOGICAL VULNERABILITY

This component of the model considers the person's deficient and inappropriate behavioral repertoires (i.e., emotional-motivational, language-cognitive, sensory-motor). In the emotional-motivational domain, we include Terry's physiological arousal in the presence of accident-related stimuli and his hypervigilance for

accident-related cues. The language-cognitive domain includes his differential response (i.e., selective attention) to accident-related cues (such as seen in his response to the Clinical Stroop Task) and deficits in problem-solving skills, his skill level being that of a typical 9-year-old. Terry did have some features of his mother's view that "God will provide," but he was also more likely to ask what he could actively do about his problems. In the sensory-motor domain, we include his avoidance of riding in vehicles, especially when his mother was driving. Deficits in social skills and social support seeking would also be included here; however, these were not problem or deficit areas for Terry. The key issue in this part of the conceptualization was identifying behavioral patterns and resources/deficits that Terry brought to current situations that would then combine with the other elements of the model, in dynamic fashion, to produce the current symptomatic response, the final component of the model.

PRESENT SYMPTOMATIC RESPONSES

The symptomatic responses (diagnosable as PTSD, in this case) result from the interactions, over time, of the other critical elements in the model: historical learning and biological vulnerabilities that were brought to the moment of the accident, followed by new learning and acquired psychological and biological vulnerabilities that set up the current pattern of symptomatic responses, these in turn being influenced by environmental contingencies (e.g., parental responses, avoidance).

Terry's presenting symptoms fell within the same three response domains noted earlier. First, in the emotional-motivational domain (which overlaps with the avoidant and arousal symptoms of PTSD), we included the symptoms of hyperarousal, irritability, difficulty relaxing, loss of interest in prior activities, and specific accident-related fears. These were all most evident in direct response to the presence of accident-related stimuli, including cars and his mother, the avoidance of which was negatively reinforced by decreased anxiety/arousal and the removal of feared stimuli. We conceptualized the conditioned arousal to accident-related cues as the motivation for his avoidance behavior and for what amounts to escape-related behaviors seen in the car when his mother was driving (i.e., criticizing and warning her repeatedly).

In the language-cognitive domain fall the symptoms of reexperiencing, in the form of intrusive thoughts and feelings that the accident was recurring whenever there were sudden changes in speed or direction. In children, repetitive play (as Terry was doing with toy cars) is seen as a reexperiencing symptom, not unlike that of intrusive thoughts or nightmares. Finally, we include his increasing concentration difficulties, especially apparent at school, in this domain.

Motor restlessness, active avoidance, and his "safety" behaviors in the car fall within the sensory-motor domain, these being posttraumatic symptoms but also being reinforced in several ways. First, behaviors that resulted in his avoiding cars altogether (such as refusing and tantrums) and behaviors that resulted in his mother's driving more cautiously (e.g., "Mom, please keep your hands on the wheel . . . watch out for that truck!") were seen as negatively reinforced by either the removal or reduction of fear-relevant stimuli, thereby decreasing arousal (i.e., emotional-motivational domain). Second, the refusal and criticism behaviors by Terry resulted in attention from his mother by her either cajoling

or even "bribing" (such as with candy or toys) him into compliance or by reassuring and soothing statements. Thus, both positive and negative reinforcement were seen as being operative here, with a notable difference in Terry's exhibition of these behaviors when his father was present, a context within which behaviors that the mother reinforced were punished by the father. Finally, we include in this domain the several regressive behaviors that Terry exhibited: the return of enuresis and even his symptoms of separation anxiety. These two symptom patterns co-occurred in his bed-wetting at night, resulting in his being allowed to sleep in his parents' bed for the remainder of the night (which may have positively reinforced bed-wetting, but also resulted in negative reinforcement by a decrease in anxiety/arousal associated with being separated from his parents). Thus, a number of symptoms that may arise from the accident (when viewed as an instance of classical conditioning) have a number of operant components that maintain it (such as by negative reinforcement through escape/avoidance) and even lead to the acquisition of other response functions (such as attention by the mother).

RATIONALE FOR TREATMENT CHOICE

We should note that there is only a very small literature on the treatment of children who have been exposed to traumatic events, the largest share of that literature being focused on children who have been sexually abused (Ruggiero, Morris, & Scotti, 2001). In our review of the PTSD treatment-outcome literature that focuses on children (Ruggiero et al.), we have found only a small number of methodologically rigorous, open trial studies, each offering empirical support for the effectiveness of cognitive-behavioral interventions, including exposure-based procedures (in vivo and imaginal procedures, such as systematic desensitization and graduated exposure) and anxiety-management strategies (e.g., relaxation exercises, role play, and education/information). We also found that nonbehavioral forms of intervention with traumatized children have not been adequately evaluated in methodologically rigorous research studies. Still, the literature does contain a number of single-case reports of successful treatment with child MVA survivors. As reviewed in Scotti et al. (in press), these studies include play therapy as a form of age-appropriate exposure, distraction and redirection techniques, guided imagery and relaxation, in-vivo exposure, and Eye Movement Desensitization and Reprocessing (EMDR). Thus, the literature holds some clues for promising directions for the treatment of child MVA survivors.

Given the above information and the case conceptualization outlined here, it is clear that the first line of attack with this case is most appropriately a combination of anxiety-management, exposure-based procedures, and contingency management procedures. The first set of strategies is important to provide Mrs. Washington and Terry some background information on their situation, that is, to normalize Terry's response to a traumatic incident and to teach him skills that will help him manage anxiety in related situations. The second set of strategies, use of exposure-based procedures, follows from the conceptualization of PTSD as the result of classically conditioned fear to trauma-relevant stimuli and operant avoidance behaviors: the classic two-factor learning model (Mowrer, 1960; see also Lyons & Scotti, 1995). Finally, as other variables had begun to control Terry's behaviors both at home and when riding in cars, some

contingency management procedures, to be implemented by Mrs. Washington, were called for.

COURSE OF TREATMENT

TREATMENT SETTING

The treatment of this case occurred at the Quin Curtis Center for Psychological Research, Training, and Service (QCC), which is the training clinic associated with the professional master's and doctoral programs in clinical psychology at West Virginia University. Thus, this case was treated in a somewhat unique situation, different from the typical private practice or community mental health center setting. As noted earlier, the case first came to our attention when the family participated in a grant-funded research project concerning the effects of MVAs on children. During the course of that research protocol, Mrs. Washington asked if there was anything we could do to assist her and her son. We provided a variety of treatment options in the community, including the QCC; when she contacted the Clinic one week later, we agreed to provide treatment. A unique aspect of the QCC is that there are several "vertical teams," each with a focus on a different speciality area (as determined by the faculty coordinator) and with graduate student therapists at varying levels of training. In this case, the PTSD Clinical Team was directed by the first author, and the graduate student therapists included the third and fourth authors. Thus, the family essentially was seen by three therapists, each with different roles and responsibilities in the case. In addition, we had the benefit of extensive assessment results from the family's earlier participation in the research protocol (see Behavioral Assessment).

INITIAL INTAKE

After gathering the usual intake information with regard to names, addresses, insurance provider, and treatment consent forms, the intake process was considerably shorter than usual as we were already familiar with the family and had a substantial amount of information from the research protocol. Thus, in the initial sessions, we were able to focus on determining whether Keisha was in need of treatment and the behavioral contingencies operating with regard to Terry's behavior and the parental response, detailed earlier. Thus, we were able to rather quickly move into the formal intervention phase, which consisted of nine hour-long sessions over a three-month period.

ANXIETY MANAGEMENT

An important first step in this treatment was education: providing Terry and Mrs. Washington with basic information about trauma and the range of effects that can be expected. We stressed that PTSD can be considered "a normal response to an abnormal situation." By this we meant to show the family that when potentially traumatic events, such as their MVA, occur, the response is fairly predictable. We discussed with the family aspects of their accident that made it traumatic *for them*, stressing that such an appraisal can often be idiosyncratic and specific to the person and event. Factors that we (therapists, Terry, and Mrs. Washington) concluded were important in this case included the mother having been trapped in the car

and thus unable to comfort her children, the children's reaction to the mother's apparently severe facial injuries, the delay in receiving assistance, and the father's less than supportive behavior in response to the accident. We discussed how these aspects of the accident led to feelings of fear and helplessness in the face of actual minor injuries and perceived/threatened serious injury, two critical features defining a traumatic event in the *DSM-IV* (APA, 1994). Given these event characteristics, we then showed Terry and Mrs. Washington how both of their behavioral responses were part of the expected cluster of symptoms that follow such an event. We further normalized their situation by providing statistics on exposure to trauma in general, rates of MVAs, and the percentage of people who can be expected to have some difficulty after a traumatic event. Finally, as it is a frequent misunderstanding by clients (and all too often by clinicians), we corrected the family's misperception that PTSD only follows exposure to combat—particularly among Vietnam veterans—or sexual assault.

We then indicated that there was much that could be done about their situation. To begin, we focused on skills that could be taught to Terry concerning how to relax himself when feeling anxious and how to distract himself when riding in cars. This approach fit well with Terry's interest in "taking action," but met with some initial resistance in the face of the mother's view that prayer and faith would resolve the situation. Thus, we gently challenged her view by first asking what expectations she had about treatment and why she had sought it, and suggesting the complementary view to her position that "God helps those who help themselves" and that, perhaps, her prayerful consideration had led her to seek an active treatment for herself and her son. This was a comfortable interpretation for her and seemed to lead to her full investment in our intervention protocol.

Terry was then taught deep breathing relaxation. We felt that this would be simpler for him to learn than progressive muscle relaxation (which we were prepared to offer if needed) and rather more portable; that is, he could easily use it immediately in those situations in which he was becoming anxious, our primary focus being travel in cars. To have Terry rate his level of anxiety, arousal, or discomfort, we used a 4-point "Worry Scale" consisting of four line drawings of a boy who, on one end of the scale, appears calm and relaxed (a rating of 1) and on the other end appears very upset and nervous (with worry lines on his face, tension in his muscles, and churning in his stomach; a rating of 4). Terry practiced the deep breathing in session until he was doing it in a manner that was comfortable for him and was associated with decreased ratings on the Worry Scale. He was then asked to practice this further at home, and to use it when riding in cars. Mrs. Washington was given a number of copies of the Worry Scale and was asked to have Terry complete these after riding in a car, indicating the highest level of worry or discomfort that he felt during that trip.

In addition to deep breathing, we wanted Terry to use some distraction techniques, the easiest of which was to simply keep himself busy with favorite activities while riding in a car. Terry volunteered that he liked to draw and color and play with his handheld computer game. He also volunteered that he really liked the superhero action figure that he had found in the clinic's toy box, and that if he had that with him, he would not only be able to distract himself but would feel "safer and stronger." We allowed him to borrow the action figure and used it in subsequent sessions to compare his behavior while riding in cars to that of a fearless superhero.

EXPOSURE

With Terry's newfound relaxation and distraction skills in hand, we began planned *graduated exposure* sessions. First, while in session, this involved Terry drawing pictures of cars and accidents or reenacting accidents with toy cars. We made these age-appropriate imaginal exposure activities fun and playful, used the occasion to model and practice deep breathing relaxation, and asked him to rate his level of worry, which quickly dropped in one session from a rating of 3 to a 1. Terry was then asked to rate his level of worry in response to approaching the family car (rating of 2), getting in the car (rating of 2), starting the engine (rating of 3), and driving away (rating of 4). As a homework assignment, Mrs. Washington was asked to have Terry sit in the family car several times during the coming week, without starting the car or driving away. Terry was to use his relaxation and distraction techniques and remain in the car until his worry rating dropped to a 1. The same procedure was subsequently followed with both Mrs. Washington and Terry sitting in the car with the motor running, but not driving away. Finally, short trips were taken until Terry could use relaxation and distraction to reduce his ratings to a 1. Within four weeks of such assignments, Terry was reliably able to ride in a car with his mother driving and not exceed a rating of 2 during any part of the trip. As a side benefit, he reported that he had begun using relaxation and distraction whenever he felt anxious, including at night when he had difficulty sleeping or at school, such as during a test. We attribute his no longer meeting diagnostic criteria for GAD at the follow-up assessment in part to his unplanned use of these new skills.

CONTINGENCY MANAGEMENT

Although Terry quickly learned and successfully used (and generalized) the relaxation and distraction skills, other contingencies were additionally operating on his "safety" behaviors in the car, as well as on his nighttime behavior of enuresis and coming into the parental bed. Thus, we developed some basic strategies for Mrs. Washington to implement, also informing Terry what these would be.

We determined that Terry may have initially been critical of his mother's driving and frequently asked her to be careful and watch out for perceived dangers as a result of his arousal to accident-related stimuli and his fear that another accident would occur. Mrs. Washington complied with these safety requests, providing a source of negative reinforcement (through decreased arousal) for Terry. However, these safety behaviors by Terry also resulted in a great deal of attention from his mother, including both calming and reassuring statements and requests for him to be quiet. We saw these interactions as positively reinforcing his safety behavior by providing maternal attention that he was not otherwise getting during car rides. Thus, intervention was a matter of acknowledging the positive reinforcement function of these safety behaviors and switching the contingencies such that these behaviors would be ignored and calm talk about any topic unrelated to cars, driving, and accidents received attention in the form of continued conversation with his mother. In theory, this was a simple reversal of contingencies for functionally equivalent behaviors; in practice, it was initially a difficult task for Mrs. Washington to undertake, as she felt she was ignoring her son's distress. By pointing out the logic of the intervention and showing her how Terry's

worry ratings actually showed he was not in as much distress as his behavior in the car would seem to indicate, she was able to follow through on this procedure. With consistent ignoring of Terry's safety behaviors, attention for other conversation, and praise for his acting calm, his safety behaviors diminished to zero within several weeks.

Finally, we were left with Terry's return to enuresis, his difficulty sleeping at night (the most prominent symptom of GAD, which existed preaccident), and his coming into the parents' bed (the behavior of most concern to the father). Terry had already initiated, on his own, using relaxation and distraction to assist him with falling asleep at night. We felt that the enuresis could be viewed as a regressive behavior that would very likely cease as his fear of riding in cars diminished. Still, it was sufficiently problematic for the parents and embarrassing for Terry that it called for more immediate action. Thus, we had Mrs. Washington and Terry implement a simple correction procedure when Terry wet the bed: He was to take the wet sheets off the bed, put them in the laundry, and remake his bed. He was then to return to his own bed and, if needed, use relaxation to help him return to sleep. The correction procedure can be viewed as a mild but logically consistent punishment for bed-wetting. His parents were not to assist in this correction procedure, nor were they to allow him to come into their bed, thus removing a potential source of attention (positive reinforcement) for these behaviors. Finally, as nighttime was associated with more worries about separation, which Terry in part responded to by coming into the parents' bed, this procedure also helped Terry relax, distract himself from thoughts about separation from his parents, and extinguish these fears. As a last component, Mrs. Washington praised successful nights (no enuresis or coming into the parental bed), and Terry provided us with a report of his success at our sessions. These combined procedures were associated with a decline in both behaviors within three weeks.

THERAPIST-CLIENT FACTORS

A solid understanding by the therapist of typical child development is necessary both to understand the difference between "developmental lags" and "treatable symptoms" (as in the case of Terry's renewed enuresis) and to provide a positive therapeutic environment. Although Terry was quite a bright and verbal youngster, it is typically important not to err by talking too far above or below the child's level of comprehension. Many novice therapists make the mistake of engaging in detailed cognitive explanations and lengthy discussion with young children. A more directive and behavioral approach tends to be more productive with children, that is, placing an emphasis on "doing" rather than "talking," as worked so well here with Terry. Therapy sessions with children often involve forms of play, useful not only to establish rapport and maintain the child's interest, but also to assist in modeling appropriate behavioral strategies, as when we engaged Terry in drawing and play with cars while practicing deep breathing relaxation, or in the use of the action figure. Establishment of trust was not difficult in this case, especially after providing information that normalized the family's experience, but it can be particularly problematic with children who have experienced certain traumatic events, such as intrafamilial sexual abuse or more gruesome traumatic accidents. In such cases, one should first take time to get to know

the child, spending time—perhaps even multiple sessions—talking about the child's life and interests apart from discussion of the trauma.

Treatment success with children also depends greatly on the degree of parental involvement. Therapists will do well to take time to explain to parents the rationale behind and procedural implementation of selected therapeutic strategies, including potential pitfalls and "side effects" (e.g., initial increases in tantrum behavior or distress). Much of the work we do to assist children takes place in the context of explaining the child's symptoms to the parents and assisting the parents in changing their own behavior to promote positive change for the child, as was the case with Mrs. Washington. This raises the issue of exactly who is the "client." Very rarely would we endorse working solely with a child client. The child lives within a system, and that system must be considered in treatment. Therapists do not have sufficient control of antecedents and consequences affecting the child outside the clinic setting. Adults (primarily parents, but often teachers as well) will be called on to monitor and consequate behavior and assist in carrying out homework assignments. Without full parental participation, treatment success will be limited. In our case example, Terry's mother was a cooperative and active participant in treatment. Without her support, Terry may have gone on to experience chronic symptoms of PTSD and restricted social functioning. Ideally, his father would have participated as well, which would have enabled the therapists to address issues of family functioning that went beyond the presenting problem (e.g., marital conflict, the father's stern parenting style). Therapists also must give consideration to cultural issues that may impact treatment. In our case example, the family held strong religious views. The therapists worked within that framework (guiding the client toward the axiom that "God helps those who help themselves"), rather than ignoring or rejecting the client's perspective on the role God played in the accident and subsequent emotional responding.

Finally, it is essential that therapists receive proper training in exposure-based strategies in order that these procedures are implemented properly and that the therapist projects confidence in the procedures, their theoretical basis, and their empirical support. Novice therapists often experience discomfort when conducting exposure trials, even the graduated exposure used here. This is particularly the case when clients have experienced horrific events and the stimuli presented during exposure (whether graduated, systematic desensitization, flooding, or implosion) are necessarily graphic, such as in the case of an MVA involving decapitation (Lyons & Scotti, 1995). Due in part to concerns about client and therapist discomfort, graduated forms of exposure have come to be used more often with children than has traditional implosive therapy.

COURSE OF TERMINATION

The time course of our treatment sessions led to a natural fading out and termination of treatment. The first five sessions were conducted on a weekly basis, the next four were two weeks apart. The final treatment contact was via phone some four weeks after the last face-to-face visit. We intentionally began to space out the treatment sessions after the initial skill training and development of contingency management procedures, as at that point, the active component of the intervention was the work that Terry and Mrs. Washington were doing at home on their own. Several phone calls were needed between some of the sessions to confer

about success with the procedures and to problem solve on issues that arose; but the problems were minor and the success was steady.

By the final session, all identified problems were remediated, Terry was feeling quite proud of himself (being most proud of having stopped wetting the bed), and Mrs. Washington was pleased with the outcome. We encouraged them to keep the procedures in effect as needed, and for Terry to continue using his relaxation and distraction skills in any situations in which he felt anxious. We concluded by presenting Terry with a certificate of achievement and allowing him to keep the superhero action figure he had borrowed from the clinic.

FOLLOW-UP

Our initial assessment was conducted three months after the MVA, and therapy continued for a three-month period. Three months after the completion of treatment (now nine months post-MVA), we were able to bring Terry and his mother back for a repeat of the full assessment battery, including the laboratory research components.

Mrs. Washington's scores on the SCL-90-R (completed about herself) were all within normal limits, except for a T-score of 70 on the Obsessive-Compulsive Scale. Recall that she completed her own course of therapy for mild PTSD, the symptoms of which were also diminished (CAPS interview and other relevant psychometrics).

Mrs. Washington's completion of the CBCL about Terry showed all subscales and total scores to be within normal limits (below a T-score of 60), except for Somatic Complaints (which remained at 70). This was consistent with Terry's own report on the RCMAS, which was within normal limits except for Physiological Anxiety. Terry's score on the CDI continued to be within normal limits, although the score was half of what it had been at the initial assessment. Additionally, his score on the IES was now at zero, indicating no trauma-related avoidant or intrusive symptoms, consistent with the reports of both mother and son (on a retest with the AccIdentS) that Terry no longer had any fear of riding in cars, regardless of who was driving. Finally, evaluation with the ADIS revealed consistent reports by mother and son that Terry no longer met criteria for PTSD, nor for separation anxiety, GAD, or enuresis. Terry also continued to report a high level of social support.

We also were able to repeat the psychophysiological assessment and the Clinical Stroop Task with Terry. On the Clinical Stroop, all of the neutral and school- and MVA-related word cards were completed within eight seconds of each other, with a faster time on the MVA words than one of the neutral cards and the school-related words. Notably, there were no errors on the MVA-related words. Neither format of vignette presentation (audiotaped vignettes to which self-report ratings were given, and extended vignettes during which heart rate and skin conductance were measured) showed any differential response to the MVA scenes. Terry's responses were now more similar to the nondistressed MVA and non-MVA groups in this research protocol than to the distressed MVA group.

Thus, at follow-up, all measures consistently indicated a lack of distress both generally and specifically related to the MVA. Of note, Terry and his mother reported on a trip they had taken to visit relatives who lived a two-day drive away. Terry noted that he was so bored (and unconcerned) on this trip that he slept for much of it, and his mother noted that he did not express any concern (his "safety" behaviors) at all during the trip.

MANAGED CARE CONSIDERATIONS

In our case example, the family was seen for nine sessions over a three-month period. This level of service generally would be covered by most insurance providers. However, the extensive assessment protocol, especially the psychophysiological assessment, conducted here generally would *not* have been covered in full, nor would it likely have been done outside of a research setting. When conducting traditional implosive therapy, in which sessions may span two or three hours in length, or in situations when massed sessions (e.g., daily for 10 days) are expected to have more success than standard 50-minute sessions held once per week, it becomes necessary to seek preauthorization for services. This may require providing substantial documentation to the insurance provider regarding empirical support for the selected treatment strategy (and information related to relative cost benefit). Another reason for the apparent preference of graduated exposure strategies with children versus traditional implosive therapy is that graduated exposure tends to conform more readily to the traditional 50-minute therapy session for billing purposes. Often, treatment plans call for therapist-accompanied in vivo (and off-site) exposure assignments. One must review the provider policy to determine whether sessions conducted outside of the clinic actually qualify for reimbursement.

Apart from billing concerns for treatment conducted off clinic premises, one must consider issues of liability for the client's safety. We advise against transporting a client in the therapist's vehicle. In the case of exposure to MVA-related cues, parents can be provided proper instruction on how to carry out homework assignments, as was the case with Terry and his mother.

We had the luxury of working with this family in a university-based clinic, allowing multiple therapists to assist in carrying out the treatment plan. Such availability of "free" personnel may be useful in setting up certain exposure trials and conducting role plays, but insurance providers generally do not cover costs for multiple therapists. On the flip side, training clinics do come with their own set of billing constraints. Many insurance providers require that the licensed faculty supervisor be present in order to bill for the session.

OVERALL EFFECTIVENESS

Overall, this package of interventions focused on Terry's symptoms of PTSD, but also incorporated into the conceptualization his other anxiety symptoms and enuresis. The package, which included anxiety management strategies, exposure-based procedures, and contingency management, was quite effective in reducing those symptoms, as well as having the unintended effect of reducing his symptoms of GAD, a problem that preceded the MVA. Although this represents a case study, we have successfully used a similar intervention package with other children who have experienced MVAs, as well as with a child who had a severe peanut allergy and significant related fears (Masia, Mullen, & Scotti, 1999). Additionally, the package is based directly on our clinical functional analysis of this case and is supported by empirical research on children exposed to traumatic events (see Ruggiero et al., 2001). Furthermore, the speed of the intervention and long-lasting effects obviated the need to seek further medical consultation for a possible medication trial. Finally, we were able to document with multiple measures (self-report, interview, physiological assessment) a pattern of behavior

fitting PTSD and Terry's related anxiety disorders and the return to nonclinical levels of all of his symptoms.

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Adults and Children

Michel Hersen

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