

THE RELATIONSHIP OF TRAUMA TO DIFFERENTIATION LEVELS, SCHEMAS
AND FAMILY ENVIRONMENTS:
A STUDY OF TRAUMA PATIENTS AND THEIR FAMILIES

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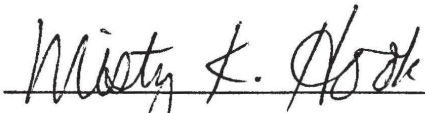
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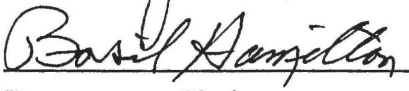

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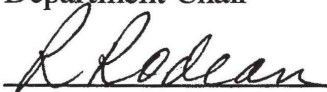

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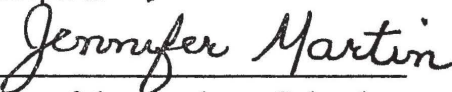

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ABSTRACT

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THE RELATIONSHIP OF TRAUMA TO DIFFERENTIATION LEVELS, SCHEMAS AND FAMILY ENVIRONMENTS: A STUDY OF TRAUMA PATIENTS AND THEIR FAMILIES

DECEMBER, 2004

The relationship of trauma to cognitive schemas, differentiation of self, perceptions of family environments, psychological symptoms of trauma victims and family members, and mechanisms for the transfer of schemas and symptoms within families was investigated. Participants in this study were hospitalized in a trauma program, ranged in age from 20 to 60 years of age, and were 77% white and 80% female. Participants completed a demographic form, the Young Schema Questionnaire (YSQ; Young, 1999), the Differentiation of Self Inventory (DSI; Skowron & Friedlander, 1998), the Family Environment Scale (FES; Moos & Moos, 1994), and the Symptom Checklist-90 Revised (SCL-90R; Derogatis, 1975). These measures were administered three times to each participant across a six-month interval. Participant's Global Distress Scale means on the SCL90-R were significantly higher than SCL-90R non-patient norms, and SCL-90R inpatient norms and these means decreased on the second and third administrations. Participants who held more maladaptive schemas and experience more psychological distress were less differentiated than participants who held fewer maladaptive schemas and experienced less psychological distress. The I-Position subscale on the DSI was the

most important in predicting global distress and number of maladaptive schemas in participants, and the Organization subscale on the FES was the only subscale that decreased from the first to the second administration at one month post-treatment and increased from the second to the third administration at six months post-treatment. A discussion of the results, including implications for theory, research, and practice, is included.

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CHAPTER I

INTRODUCTION

This study was an attempt to update and extend the knowledge about psychological responses to trauma and to evaluate the psychological services available to trauma victims. The relationship between trauma and cognitive schemas, differentiation levels, family environments, and psychological symptoms of trauma victims and their families were investigated. Treatment derived from the Ross (2000) Trauma Model will be tested to identify a relationship between treatment and changes in cognitive schemas, psychological symptoms, differentiation levels, and family environment. Ross Institute therapists target cognitive schemas and psychological symptoms directly and I expected that differentiation levels and family environment would change in response to patient improvement.

Carlson and Dalenberg (2000) identify negative valence, suddenness, and lack of controllability as three features that define trauma. Each participant in this study experienced trauma, either directly or vicariously through a relationship with a family member. For many participants, the trauma occurred during childhood and for others during adolescence or adulthood. Trauma victims commonly respond directly to trauma when they re-experience the traumatic event and avoid activities and behaviors that may trigger anxiety (Carlson & Dalenberg, 2000). These responses are mitigated by biological factors, the victims' developmental levels at the time of the abuse, severity of the abuse,

social contexts, and the victims' prior and subsequent life events. Participants entered the hospital due to their direct responses to trauma and secondary symptoms that included depression, aggression, substance abuse, low self-esteem, self-harm, difficulties in relationships, guilt, shame, identity confusion, and dissociation (Earl, 1991).

Families of trauma victims were included in this study because individuals do not exist in isolation. However, very few family members participated and none filled out assessments on all three administrations. The connections between trauma victims and family members make possible a relationship among schemas and psychological symptoms of all family members. These connections are mitigated by differentiation levels, which may mediate the transmission of maladaptive schemas and symptoms among members. If true, those who experience trauma directly and their less differentiated family members would experience similar symptoms and schemas.

Schema Theory

In the research literature, the concept of schema is identified as cognitive-affective structures, basic assumptions, personal theory of reality, themes, and networks (Newman, Riggs, & Roth, 1997). For the purpose of this paper, schemas are defined as stable and enduring cognitive themes that people construct during childhood yet elaborate upon and change throughout their lifetimes in response to experiences (Young, 1999). People cognitively process experiences by using schemas as templates, which facilitate the schema's stability and endurance by remembering schema consistent information, forgetting stimuli in a schema consistent manner, and maintaining schema consistent thoughts even when proven unequivocally false (Janoff-Bulman, 1989).

Because schemas are selective, people's construction of mental reality usually does not correspond exactly with external reality (Znof & Grawe, 2000). The construction of mental reality, or constructivism, is the belief that people actively build their own mental representations of the world, and these constructions serve a purpose (Meichenbaum, 1993). Schemas are the enduring results of cognitive constructions. In the event of a trauma, constructions serve to make sense of the event and to avoid anxiety. Whether or not these constructions mirror reality is not a factor. These traumatogenic constructions mold people's schemas. When present schemas are not helpful, they are considered maladaptive. Maladaptive self-schemas are harmful beliefs about the self and maladaptive world-schemas are harmful beliefs about things outside the self.

Since a constructivist stance negates the possibility of determining the truth or accuracy of a schema, the schemas evaluated in this study were based on their adaptivity as recommended by Prawat (1996) and Znof and Grawe (2000). A maladaptive schema maintains a chronic state of negative thought and emotion and overly restricts people's relationships to the world (Roth & Newman, 1992). The restriction causes schemas developed to adapt to trauma to become maladaptive when taken out of the context in which the schemas were constructed.

Researchers associate maladaptive schemas with personality disorders (Young, 1999), mood disorders (Van Sickle, 1996), relationship dysfunction (Dattillio & Bevilacqua, 2000), dissociative disorders (Fine, 1996), and posttraumatic stress disorder (Smucker & Dancu, 1999). Many patients with maladaptive schemas demonstrate co-

morbidity, receiving multiple or changing diagnoses (Ross, 2000). Schemas are clearly influential in people's mental health.

Maladaptive schemas are part of rigidly held belief systems. Kerr and Bowen (1988) state that families, which use rigidly held belief systems to keep the family intact, have low levels of differentiation. Family systems theory also postulates that "a disastrous series of life events" (Kerr & Bowen, 1988, p. 304) may act on belief systems to keep families' differentiation levels low for several generations. The interaction between schemas and differentiation levels is part of Bowen's theory on family systems.

The Theory of Differentiation

At birth, infants enter a state of complete emotional fusion with their mothers (Kerr & Bowen, 1988). As the years pass, children separate from their parents through a process called differentiation, a pivotal aspect in human development (Bohlander, 1995). According to Kerr and Bowen (1988), an individuating life force propels children to become separate persons. However, a second force, identified as the togetherness force, works in conjunction with the individuating force. The togetherness force pushes developing children and families to remain emotionally connected and to operate in reaction to others. Excessive individuation leaves children emotionally cutoff and lacking intimacy. Excessive togetherness does not allow children to think, feel, or act for themselves.

The forces of togetherness and individuation are emotional processes. Well-differentiated people can control the influence of emotional processes and affective responses on their beliefs and behaviors (Bomar & Sabatelli, 1996). Emotional processes

and affect work in conjunction with cognition to influence differentiation. Kerr and Bowen (1988) define emotional processes as individuals' automatic reactions that are outside conscious awareness. Affective processes are defined as feelings, such as sadness, anger, fear, and happiness (Averill, 1997). Cognitive processes are defined as thoughts, ideas, beliefs, and schemas.

Kerr and Bowen (1988) focus on the emotional system as the source of the togetherness and individuating forces. As part of the emotional system, these forces influence the affect and cognitive systems. People are aware of these forces through their experiences of feelings and observations of their behaviors and the behaviors of others (Kerr & Bowen, 1988). Figure 1 illustrates the closeness of the affective and emotional systems. When the emotional system is activated, it triggers feelings in the affective system, which are experienced consciously. Together, these systems greatly influence interactions with others, probably more so than the cognitive system (Kerr & Bowen, 1988). The cognitive system is the seat of intellectual and executive functioning (Maclean, 1978). Maclean refers to the cognitive system as the part of the human brain that thinks, knows, understands, and communicates complex ideas and initiates human behavior. For most people, these cognitive system processes are highly influenced by the emotional and affective systems (Kerr & Bowen, 1988).

Kerr and Bowen (1988) state that the well-differentiated cognition is objective, rather than subjective. In light of the constructivist perspective, objectivity is impossible (Prawat, 1996). To bridge these two understandings in this paper, the concept of

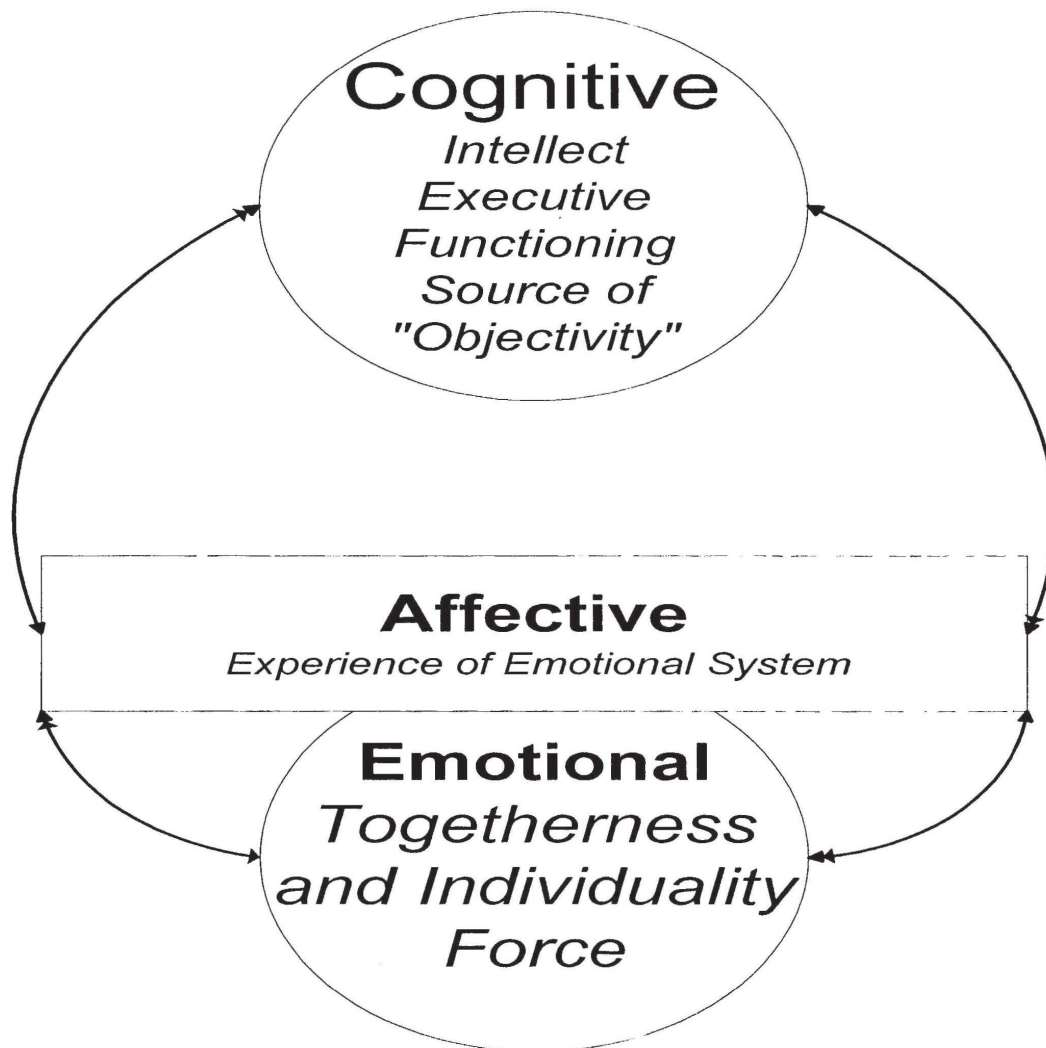


Figure 1. The relationship between cognitive, affective, and emotional processes.

The figure highlights the close relationship between the affective and emotional processes and shows the interactions flowing both ways. The figure is derived from Bowen's theory of differentiation (Kerr & Bowen, 1988).

differentiation is used to reflect the degree of direct influence the emotional and affective systems have on decision-making and beliefs.

Direct influence refers to the reactions to the emotional and affective systems without contemplation and does not include the use of these experiences as information. For the purposes of this paper, I define well-differentiated people as those whose cognitive system separates out the direct influences of feeling and emotion to construct an adaptive perception. An adaptive perception is most probable when experiences of emotional and affect processes are processed by the cognitive system and not allowed direct influence on behavior. Differentiation leads to a way of thinking that translates into a way of being (Gilbert, 1992). By identifying and limiting the influence of the togetherness force, well-differentiated people do not give up intimacy but minimize the need for support and acceptance from others.

Family Environment

Differentiation levels of family members greatly influence the interactions (Kerr & Bowen, 1988) that create a family environment, which is the total experience of the families' interactions. Current family environment is crucial for victims to overcome the psychological effects of trauma. Posttraumatic family support helps people regain a sense of controllability and reduces the negative valence of the trauma (Carlson & Dalenberg, 2000). Harmful trauma responses are mitigated when a family shows care, allows expression of trauma-related emotion, listens supportively to the trauma story, and demonstrates support (Nash, Hulseley, Sexton, Harralson, & Lambert, 1993).

Supportive family environments are important, but less common, because trauma responses often lead to difficulty with interpersonal relationships (Carlson, 1997).

Trauma responses of anger, fear, numbing, aggression, and avoidance do little to endear trauma survivors to other family members. Maladaptive traumatogenic schemas make family support difficult to receive, even when it is available. For example, maladaptive self-schemas of self-loathing may cause victims to push away support.

Purpose of the Study

The purpose of this study is to assess the relationship between trauma-based psychological symptoms in trauma survivors and the psychological symptoms of their family members. Schemas and differentiation levels of family members will be investigated as possible links to the transfer of symptoms from victims to family members. The patterns of change in family environment will be assessed. The final purpose is to assess the effectiveness of the Ross Trauma Model (2000) as a guide for treatment.

CHAPTER II

LITERATURE REVIEW

The effects of trauma ripple through individuals' minds and into their families.

The effect on families reverberates back to influence its traumatized members.

Hypothetically, the impact of trauma is no longer contained in the victims' schemas but passed among family members along with psychological symptoms, a tentative concept not yet tested until now. Human systems theorists would predict that schemas and symptoms would pass more easily among members whose boundaries are weak, boundaries determined by low differentiation levels. By reviewing the research literature on trauma, schemas, differentiation levels, and family environments, the reader is prepared to integrate these concepts into a new understanding of the feedback between trauma victims and their families.

Trauma

In this section, the definitions and the prevalence of trauma, as well as possible impacts on those who experience traumatic events, will be discussed. Trauma is defined as events that surprise the victims, lack controllability, and are extremely uncomfortable (Carlson & Dalenberg, 2000). These three features are common in the trauma experiences of victims of child abuse, rape, war, and assault, events that are common experiences for many people in the United States. *The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; American Psychiatric Association (APA, 1994), criteria for

Posttraumatic Stress Disorder (PTSD), defines trauma as experiencing, witnessing, or confronting an event that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others, in which victims experienced intense fear, helplessness, or horror.

The statistics regarding trauma in the United States infer that trauma is not an unusual life experience. In terms of violence among adults, Browne (1993) indicates the lifetime prevalence of violence against women by male partners is between 21% and 34%. Between a tenth and a quarter of adult women will be raped or sexually assaulted in their lifetimes (Koss, 1993). The Bureau of Justice (2001) reports that 248,000 people were raped or sexually assaulted in 2001. In the last 30 years, America's soldiers fought in Vietnam, Grenada, Iraq, Somalia, Bosnia, Yugoslavia, and Afghanistan. With respect to youth, the World Health Organization reported in 1997 that parents or guardians abused five to ten percent of all American children. The Bureau of Justice (2001) sums up the experience of violence by identifying more than 5,932,000 people who experienced a violent crime in 2001; from that group, over two million were injured. Trauma in the form of spousal and child abuse, sexual assault, violent crime, and war has become a common experience for Americans.

Traumatic events surprise victims because these events are incongruent with their current schemas. Masserman (1943) and Rescorla (1971) suggest that when researchers violate positive expectations with negative stimuli, the result is a more dramatic negative reaction than if the negative stimulus takes place without the positive expectation. Therefore, even one aversive event that violates expectations may produce long lasting,

extreme disturbance. When people do not accommodate or assimilate the surprising information, they experience a persistent anxiety accompanied by strong negative emotions (Znoj & Grawe, 2000). Combined, the anxiety and negative emotions keep the trauma in the victims' consciousness such that they are preoccupied with the inconsistencies and their traumas. Using the Stroop paradigm (Stroop, 1935), Waller and Smith (1994) research preoccupation with trauma-related information and find that trauma victims with psychological symptoms focus longer on information related to trauma than nonvictims.

Trauma's lack of controllability causes victims to shift their perceived locus of control (LOC) from the abusers to themselves by taking responsibility for the traumatic events (Horowitz 1992; Janoff-Bulman, 1989; Reiker & Carmen, 1986; Ross, 2000; Roth & Newman, 1992; Valentine & Feinauer, 1993). The LOC shift is a defense against a double bind (Bateson, 1978) that people experience when the same people who control their survival are also the source of their pain. For adults, this phenomenon has been termed the Stockholm Syndrome to identify people who attach to their perpetrators (Solomon, 1982). For abused children, the shift in the locus of control starts when two instinctual drives, attachment and flight from painful stimuli, are at odds (Ross 2000).

The conflict between these instinctual drives, attachment and flight from pain, leads to an ambivalent attachment to the perpetrator (Ross, 2000). Ambivalent attachment to the perpetrator is the desire to simultaneously approach and withdraw from abusive caretakers, or others who influence the likelihood of survival, causing high levels of chronic anxiety. To decrease anxiety, children construct a schema of self-blame to shift

perceived control from perpetrators to themselves. When children believe they can control their abuse, they also believe they can safely attach without fear of attack. Since the belief is false, the abuse usually continues and secondary maladaptive schemas of defectiveness, incompetence, lack of self-control, failure, vulnerability, and badness develop. This LOC shift frees trauma victims from the anxiety of ambivalent attachment in the short-term at the cost of adaptive views of self.

The experiences of trauma also relates to memory abnormalities in victims, which magnify the trauma's impact. The nature of traumatic memories often puzzles psychologists because victims may have trouble retrieving a complete memory of the events, yet experience involuntary intrusive memories. Memory loss and intrusive memories make developing a stable sense of self more difficult (Markowitsch et al., 1998). Memory is autobiographical knowledge that grounds the self. When the self is not grounded, people often feel disoriented or out of touch with their surroundings. In disoriented states, it is more likely that environmental cues drive victims' memories (Ehlers & Clark, 2000). Cue driven memories that consist of sensory impressions rather than thoughts are common in those who suffer from Posttraumatic Stress Disorder. When memory is experienced in this way, it feels like it takes place in the present and is called re-experiencing. Ehlers and Clark (2000) believe that re-experiencing also happens when trauma victims experience strong, unexplained affect without a conscious memory.

The research on traumatic childhood experiences and its relationship with sexual orientation yields mixed results. Brannock and Chapman (1997) find that lesbian women had not reported more negative sexual experiences than heterosexual women. However,

Tuttle (1997) find that homosexual men were 9.7 times and homosexual women were 2.8 times more likely to have experienced sexual trauma as children than the general population. While sexual orientation is not a major focus of this study, inclusion of sexual orientation may be key for future analysis of data and increased understanding of the participants.

The statistics regarding child abuse, rape, violent crime, and war indicate that trauma is not an uncommon experience for people living in the United States. People who experience trauma often experience intense fear and helplessness. These painful feelings may lead trauma survivors to attempt to make sense of unexpected traumas. Unfortunately, attempts to make sense of horrific life experiences may be impaired by the events' influence on victims' memories. Without accurate memories, an attack on victims' adaptive schemas becomes more likely than if the memories were intact. This phenomenon allows for victims to shift blame from perpetrator to self and increases the likelihood that maladaptive schemas will replace pre-trauma beliefs.

Schemas

Schemas are relatively stable and enduring cognitive themes that develop during childhood and serve as templates for the processing of later experiences (Terr, 1991). Schemas change and develop in response to people's perceptions of the environment. Researchers differ in how to categorize schemas. Foa and Riggs (1994) simply place all schemas into one of two groups: schemas about oneself and schemas about the world. Schmidt, Joiner, Young, and Telch (1995) take a more complicated approach by identifying 16 schemas in six categories by using a cluster analysis. McCann, Pearlman,

Sakheim, and Abrahamson (1988) theorize that schemas fall into five categories, safety, trust, power, esteem, and intimacy. Each category has a dual component of self and other. The dual component allows people to hold themselves in low esteem but others in high esteem. Another model conceptualizes schemas into three categories: (1) benevolence of the world, (2) meaningfulness of the world, and (3) worthiness of the self (Janoff-Bulman 1989). Just as theorists differ on their categorization of schemas, they also differ on how schemas change. Whereas Foa and Riggs (1994) and Janoff-Bullman (1989) believe that schema change is rapid, Horowitz's (1992) model is one example of slow schema change. In this section, theoretical ideas on categorizing schemas and models for how schemas change, will be reviewed.

Foa and Riggs (1994) explain a common relationship among internal and external schemas. An internal schema of competence relates to an external schema of a predictable and controllable world. That is, when people act on their environment and get results similar to what they expect, both an external schema of a controllable, predictable world and an internal schema of competence develop. Research also suggests that internal schemas interact (e.g., Black & Pearlman 1997; McCann et al., 1998; Winnicott, 1965). For instance, Black and Pearlman (1997) argue that self-esteem is correlated with the development of two related internal schemas: self-trust and self-intimacy. Similarly, Winnicott (1965) suggests that self-trust develops when a child experiences responsive caregiving, and self-intimacy develops when others do not intrude into children's quiescent states. When children possess adaptive self-trust and self-intimacy schemas, they are likely to hold adaptive self-esteem schemas.

Cognitive psychologists consider schemas to be adaptive or maladaptive (Schmidt et al., 1995). According to Schmidt et al. (1995), maladaptive schemas predict psychopathology. For example, the number of maladaptive schemas trauma victims hold correlates with the number and severity of the posttraumatic stress disorder symptoms victims experience (Shields, 1999). Theorists and researchers differ in interpreting the connection between schemas and symptoms. Some theorists concentrate on how beliefs connect directly to behaviors (e.g., Newman et al., 1997), while others focus on the dissonance created when pre-event and post-event schemas are incongruent (e.g., Janoff-Bulman, 1989). Those who center their research on dissonance believe that symptoms are a means to avoid anxiety (Znoj & Grawe, 2000). It is likely that both shape behavior, often at the same time.

According to McCann et al. (1998), children develop schemas sequentially, starting with safety. Schema development is synchronous with typical development (McCann et al., 1998). While synchronous, McCann et al. do not believe that schema development is linear in action because schemas interact with each other. The interactions of schemas create patterns of internal belief structures that differ in all people. Therefore, a change in one belief structure will result in a change in other belief structures.

Schemas change in response to the environment in at least two ways. The most common means to schema change happens gradually in response to moderately incongruent interactions with the environment (Janoff-Bulman, 1989). When schemas change slowly, the overall structure of the cognitive system is not threatened. A second

means to schema change is called conversion (Janoff-Bulman, 1989). In this model, change is rapid because people's current schemas cannot account for their experiences. Moderately incongruent interactions are assimilated into people's current schemas by changing how people perceive the information, but dramatically incongruent information changes the schemas through accommodation. The likelihood that people will accommodate their schemas increases when experiences are highly significant and the event is extremely incongruent with current schemas (Foa & Riggs, 1994).

In contrast to Foa and Riggs (1994) and Janoff-Bulman (1989), Horowitz (1992) proposes a model of accommodation of schemas that happens slowly over time. For example, traumatic events alter adaptive schemas more often when victims have no ready resources to cope with the events (Horowitz, 1992; Horowitz & Reidbord, 1991). These victims perceive that they cannot save themselves from harm and feel powerless. Powerlessness is highly incongruent with an adaptive schema of competence (Horowitz, 1992). The incongruence of powerlessness and competence is constantly in the consciousness of victims because of the stressful events and intrusive memories that follow a trauma. When incongruence is present, victims may have intense emotional reactions. Each emotional reaction may lead victims to slightly accommodate schemas until schemas are no longer incongruent with the trauma.

Mental control processes alter the content of memories and beliefs, alter consciousness states, and accommodate schemas to regulate anxiety by minimizing schema incongruence and protecting against future negative emotional outcomes (Znoj & Grawe, 2000). Horowitz's (1992) model of accommodation highlights one way that

mental control processes relate to schemas. The mental processes control content when they shift attention from an event, extend forgetting, and facilitate denial. Waller and Smith (1994) suggest that schema content is controlled by trauma victims who reinterpret their traumas as positive, deny their traumas, or experience recurrent intrusive memories that differ from reality. Controlling content makes traumatic events easier to assimilate and avoids schema change. Znoff and Grawe (2000) identify five ways people alter forms of consciousness: (1) change the representation, (2) dissociation, (3) increase or decrease time span, (4) use illogical reasoning, and (5) hyper- or hypo-arousal. Young (1999) supports this finding by showing that trauma victims' experiences of the world differ from non-victims. These alterations in consciousness allow maladaptive schemas to thrive. Mental control processes alter schemas to accommodate both the old and new information. For example, victims may alter self-schemas to believe that they are responsible for abuse to decrease incongruence with an adaptive schema that the world is just and others can be trusted. This mechanism is responsible for the locus of control shift discussed earlier (Ross, 2000). Znoff and Grawe (2000) state that mental distortions are not random products of mental breakdown but purposeful actions meant to overcome inconsistencies.

Individual personality attributes greatly influence the likelihood of maladaptive schemas. Kolts, Robinson, and Tracy (2004) find that sociotropic individuals focus on social supports and require positive reassurance and regard. Following trauma, they are more likely to develop maladaptive schemas of the self. Autonomous individuals are

invested in independence and freedom from constraints. Following a traumatic event, they are more likely to develop maladaptive schemas of others.

When schemas are changed to avoid anxiety, people are more likely to experience dichotomous thinking (Arntz, 1994). Dichotomous thinking occurs when trauma victims see themselves and the world on extreme poles of a judgment continuum. Since the nature of people and the world is both good and bad, trauma victims will attend to evidence that supports their maladaptive schema and ignore contrary evidence. Victims must integrate both the positive and negative experiences of others and the world before schemas can become adaptive.

The complexity of schemas and their interactions with each other may explain the existence of so many different schema categories. Schemas not only interact to influence each other but also are influenced by the environment, slowly when the environment presents information that is moderately incongruent with schemas and more rapidly when the environment presents information that cannot be accounted for by current schemas. When schemas change from adaptive to maladaptive, the likelihood of psychopathology increases. Dichotomous thinking is often present when people create maladaptive schemas to avoid anxiety, a function of people's emotional processes. When individuals' schemas are influenced more by the emotional processes than an adaptive view of the environment, Kerr and Bowen (1988) would categorize these people as having low-differentiation.

Differentiation

In this section, the concept of differentiation of self is explored. Differentiation is defined and broken down into four key components, which are functions of emotional processes that are only perceived in relationship. Relationships are shown to not only reflect but shape differentiation levels, including anxiety, family of origin behaviors, and quality of couples' relationships. This section concludes with a discussion of the connection between differentiation and mental distress.

In his theory of differentiation, Bowen attempts to put human behavior on a continuum and expand the context of that behavior to relationships (Kerr & Bowen, 1988). At least four factors play into individuals' levels of differentiation: (1) emotional reactivity, (2) Emotional Cutoff, (3) fusion-with-others, and (4) I-Position (Kerr & Bowen, 1988; Skowron & Friedlander, 1998). Emotional reactivity is behavior directed toward another in response to anxiety. These behaviors vary from extreme activity to behavioral paralysis. When people are highly emotionally reactive, their anxiety controls their behavior. People are cutoff emotionally when they distance themselves from family members to avoid the anxiety generated by family relationships. Fusion-with-others indicates the amount of energy people exert within significant relationships. Extremely fused people may feel that they cannot survive unless others respond as expected and they often borrow and lend their sense of self to emotionally significant others. In contrast, I-Position is the ability to be individuals while in emotional contact with other people or groups. For example, personal values, despite pressure from others, determine beliefs and behaviors of individuals with a well-differentiated I-position.

Many family system therapists believe that the perspective of the *DSM-IV* (American Psychiatric Association, 1994) runs counter to their conceptualizations of psychological problems (Greene, Hamilton, & Rolling, 1986). Family systems therapists see dysfunctional behaviors as a result of interactions between family members and not residing solely in one member. Bowen (1978) perceived the concept of differentiation as a bridge between the *DSM* and the family systems perspective, a perception supported by Greene et al. (1986). Green et al. report that differentiation levels do not discriminate by severity or type of diagnosis but do discriminate between people who have mental illness and those who do not. Tuason and Friedlander (2000) find that differentiation levels predict psychological distress on the Symptom Checklist-90 (SCL-90; Derogatis, 1994) and trait anxiety on the State-Trait Anxiety Inventory (STAI-T; Spielberger, 1983). Tuason and Friedlander's study was performed in the Philippines and is consistent with earlier research in the United States (e.g., Garbarino, Gaa, Swank, McPherson, & Gratch, 1995; Greene et al., 1986; Skowron & Friedlander, 1998). Skowron, Holmes, and Sabatelli (2003) determine that less emotional reactivity and the ability to take an I-Position in relationships decreases Fusion with Others, and less Emotional Cutoff predicts well-being among both women and men. Furthermore, very low differentiation is associated with borderline personality features (Seibel & Dowd, 2001).

Understanding differentiation requires understanding affect and its relationship to emotional processes and cognitions. Affect includes all experiences associated with feelings and is closely associated with emotional processes. Emotional processes are often made conscious by the affect they trigger. This phenomenon has caused many

researchers to confuse emotional processes and affect (e.g., Skowron & Friedlander, 1998).

Affect mediates and translates information from the emotional processes to cognition and is directly affected by cognition (Lazarus, 1991). The cognitive system also interprets and evaluates affect after it is expressed (Roseman, Antoniou, & Jose, 1996). For example, people usually attribute the cause of their anger to the behaviors of other people. However, many research participants report irrationality and lack of control as key characteristics of anger experiences (Hall, 1899, as cited in Parkinson, 1999; Parrott, 1995). Parkinson (1999) identifies an example of emotional reactivity when he describes participants who cannot rationally explain their anger. Frijda (1993) highlights another form of emotional reactivity with his finding that many people feel guilty for events for which they believe that have no responsibility. Parkinson (1999) believes that emotions may develop apart from any cognitive appraisal. In these cases, emotional process are likely to influence affect directly.

Differentiation is set apart from other concepts of mental well-being because differentiation levels can only be understood in relationship with others (Kerr & Bowen, 1988). Relationships between people cause a reaction from the emotional systems of individuals. Increases in the significance of relationships correlate with increases in cognitive subjectivity to emotional processes (Gilbert, 1992). Parkinson (1999) supports Bowen's theory that significance of relationships with others has an impact on the degree of emotion expressed. Participants who rank relationships as close experience more intense anger than participants who did not rank the relationship as close.

Anxiety is the response of an organism to a real or imagined threat (Kerr & Bowen, 1988) and is the most potent trigger of emotional reactivity. To understand anxiety's influence on differentiation, it is important to distinguish between chronic and acute anxiety. Chronic anxiety generally occurs as a response to perceived threats and continues long past the triggering incident (Herman, 1992). Learning plays a role in chronic anxiety because chronic anxiety is fed by a fear of what may happen. Acute anxiety is a mental and physiological response to a threat that dissipates once the threat is gone.

Many events influence chronic anxiety. Once chronic anxiety is activated, it becomes independent of the triggering element (Kerr & Bowen, 1988). An example of the independence of anxiety from the triggering element is when a disturbance of balance within a home that triggers chronic anxiety causes family members to react to the event and to the reactions of other family members. Some families react to chronic anxiety by focusing on a problem in one of its least differentiated members (Kerr & Bowen, 1988). By compartmentalizing the anxiety in one member, other members of the group are relieved from handling the anxiety inherent in their relationships with each other. The troubled member becomes the so-called identified patient and expresses the pain of the entire family. Family members may believe that their behaviors help identified patients, but if identified patients improve, other family members will be forced to express their pain themselves (Figley, 1989; Kerr & Bowen, 1988).

Family members may also adapt to chronic anxiety through emotional distance. Family members are more likely to distance themselves emotionally from other members

when differentiation decreases (Kerr & Bowen, 1988). As differentiation decreases, the emotional flexibility among members to handle anxious events is reduced. Therefore, when people most need emotional flexibility to respond to anxiety, the anxiety limits the availability of their emotional flexibility. The impact of anxiety increases because emotional distance limits the emotional process of togetherness, creating another source of anxiety (Kerr & Bowen, 1988).

The influence of anxiety makes it difficult for researchers to assign specific levels of differentiation because anxiety causes people's current level of functioning, called functional differentiation, to fluctuate from their base level of functioning, referred to as basic differentiation (Kerr & Bowen, 1988). People experience functional differentiation in response to specific relationships. High anxiety within the relationship decreases functional differentiation. Basic differentiation, mainly determined by people's families of origin, does not change much after age 30. It is possible that people may have very different levels of basic differentiation, yet function similarly, because anxiety levels differ. People with higher levels of basic differentiation experience less drastic swings in functional differentiation because anxiety influences well-differentiated people less than poorly differentiated people.

Factors influencing the development of differentiation. von der Lippe and Amundsen (1998) conceptualize human development as the dialectical process between the need for autonomy and the need for connectedness (i.e., individuating and togetherness). As individuals develop distinct selves and thereby differentiate, they experience less emotional fusion with other people (Sabatelli & Mazor, 1985). People's

differentiation levels are set primarily during adolescence (Kerr & Bowen, 1988), although differentiation levels may continue to change into individuals' thirties and forties (Williamson, 1981). Poorly differentiated families regulate adolescent psychological differences in such a way as to block the process of differentiation. These families discourage curiosity and initiative and are characterized by a lack of emotional support, empathy, integration, and cohesion (Hauser, Powers, & Noam, 1991). Poorly differentiated families do not tolerate autonomy and individuality, and perceive expressions of individuality as disloyalty. Gavazzi, Anderson, and Sabatelli (1993) indicate that low family differentiation predicts high adolescent anxiety levels. Adolescents react to anxiety by rebelling against the family or depending on the family for approval. Gavazzi et al. report that family differentiation levels relate to the severity of adolescent problems with school, friendships, and authority.

Family anxiety activates triangles, the avoidance of anxiety by two people through the use of a third person, which is another behavior that inhibits differentiation (Kerr & Bowen, 1988). Triangles are formed in response to anxiety between two family members, and increase in number and severity as family conflict increases (Kerig, 1995). When parents choose to avoid the anxiety between them, they may transfer the anxiety to their children. The means to activate triangles are numerous; however, each triangle involves a child in a fusional relationship with one or both parents, a relationship that inhibits differentiation.

Well-differentiated families regulate psychological distance to optimize the forces of togetherness and separateness (Sabatelli & Mazor, 1985). These families interact to

maintain a homeostatic balance. Balance is maintained when members encourage each other to speak for themselves, assume responsibility for developmental tasks, and communicate confirmation and respect (Bomar & Sabatelli, 1996). These families clearly define boundaries between the adolescents' and parents' generations (Bowen, 1978). The family does not require adolescents to sacrifice their own individuality to stay connected to the family; instead, young family members are free to experiment with different identities before committing to a view of self (Allison & Sabatelli, 1988). Healthy differentiation requires adolescents to decrease connectedness with parents and increase connectedness with peers and extra-familial adults (Collins, 1997). Well-differentiated families also facilitate connectedness when adolescent members experience closeness without fear of compromising their personal identity (Allison & Sabatelli, 1988). Hauser et al. (1991) identify equal opportunities to explain situations, joint problem-solving, and expressing acceptance apart from behavior as patterns that connect adolescents to families in ways that increase differentiation. The way well-differentiated families interact leads to greater social commitment, active involvement with others, and social competence (Bomar & Sabatelli, 1996). High levels of differentiation between parents and adolescents and between each parent correlate with high levels of psychosocial maturity in adolescents (Bomar & Sabatelli, 1996; Gavazzi, Goetler, Solomon & McKenry, 1994; Gavazzi & Sabatelli, 1990).

Differentiation and couples. Bowen states that people are likely to select mates whose differentiation level is similar to their own (Kerr & Bowen, 1988), although researchers have had difficulty supporting this phenomenon (e.g., Bartle, 1993; Skowron

& Friedlander, 1998). In these studies, differentiation similarities between couples are no more likely than those of individuals matched at random. However, researchers continue to believe lower levels of partners' differentiation are related to an increased likelihood of fused relationships (Skowron & Friedlander, 1998) and higher levels of differentiation predict psychological well being in men (Bohlander, 1999). When stress increases, fusion increases, heightening the probability that dysfunction will manifest in one of three ways: (1) marital conflict, (2) disorder in one of the spouses, or (3) projection of anxiety onto a child. When differentiation levels are high, couples maintain their basic selves and create flexible boundaries, allowing each partner to connect to the other and have a separate identity (Bartle, 1993).

The degree of fusion between couples often follows a distinct pattern. When first married, partners experience intense emotional processes driven by their togetherness forces (Kerr & Bowen, 1988). Conflict between couples signals an increase of the force for individuation. When conflicts arise, poorly differentiated couples may use denial, distortion, misperception, or lying to avoid friction (Kovacs, 1988). If couples divorce, one or both of the partners may experience a loss of self related to the degree of fusion (Haber, 1990). Participants in Haber's (1990) study who were involved in the dissolution of fused relationships frequently indicated that they felt incomplete. This loss of self or sense of incompleteness is another source of dysfunction and distress.

If the poorly differentiated couple stays together, they may start a pattern of overfunctioning/underfunctioning. Overfunctioning occurs when one partner takes on more than his/her share of responsibility for the couples' daily tasks and well-being.

Underfunctioning occurs when a partner takes on less than his/her share of responsibility. Overfunctioning and underfunctioning partners interact to push each other to extremes. Driven by guilt and fear, overfunctioning partners feel responsible for the emotional well-being of their spouses (Verbosky & Ryan, 1988). Overfunctioning/underfunctioning may stabilize families if one partner is chronically dysfunctional (Kerr & Bowen, 1988). However, this short-term solution leads to a positive feedback loop, in which underfunctioning partners begin to rely on overfunctioning partners to tell them how to act and feel (Mason, 1990). A second pattern in low differentiated couples combines the emotional reactivity in one partner and Emotional Cutoff in the other. One of the partners may show external signs of secondary stress (i.e., emotional reactivity) while the other appears calm and reserved (i.e., Emotional Cutoff; Gilbert, 1998). These patterns highlight how the behaviors in one half of the couple may dictate the behaviors of the other.

Males and females may differ in the process of differentiation development because society socializes many females to connect to their families of origin (Gilligan, 1982). Bomar and Sabatelli (1996) report that females from poorly differentiated families develop higher degrees of psychosocial adjustment than males from similar families, if these females take on a subordinate role in marriage because the behavior associated with poor differentiation is more in line with societies norms for women. Bomar and Sabatelli postulate that poor differentiation in females with traditional roles benefits the psychosocial adjustment of poorly differentiated males because these wives absorb their

husbands' anxieties, thus improving the men's functioning, yet inhibiting women's potential.

In sum, differentiation is the ability to balance the intrapsychic and interpersonal dimensions of the self (Bowen, 1978) and can only be understood in the context of relationships with others. Relationships are the source of anxiety, an experience so similar to emotional processes that Kerr and Bowen (1988) do not differentiate between the two phenomena. The amount of anxiety interacts with the ability to balance intrapsychic and interpersonal dimensions to influence behaviors, which is often directed towards other family members. These family-directed behaviors make up the family environment.

Family Environments of Trauma Victims

Families create their environments through multiple interactions at a variety of levels. When family members are able to predict with relative accuracy how other members will react to their behaviors, families experience a sense of order. When predictions are less accurate, families experience chaos. During families' lifetimes, they may move between order and chaos on several occasions, depending on the number of critical moments or bifurcation points these families experience (Butz, Chamberlain, & McCown, 1997). Bifurcation points are periods of stress where the families' order is thrown into chaos, creating "milestones in the system's evolution" (Briggs & Peat, 1989, p. 144). Bifurcation points occur when families experience the traumatization of one of its members or when members, who were once sick, begin to recover. Once families experience a bifurcation point, families will self-organize to return order to their

interactions (Prigogine & Stengers, 1984). This section will discuss the changes many families go through when one or more members experience a traumatic event.

When one or both of the parents are trauma survivors, the family environment may exhibit specific patterns of dysfunction. Rosenthal, Sadler, and Edwards (1987, p.84) note that these families may exhibit the following symptom patterns:

1. Boundary distortions between members;
2. Role reversal in which the children take on parental roles;
3. Children developing physical symptoms in response to parents' anxiety;
4. Emotional Cutoff toward victims once the trauma is revealed;
5. Children's ambivalence toward victims, struggling between love and hate;
6. Children's extreme need for emotional support, often sought in unhealthy ways;
7. Schemas of guilt, shame, and self-blame;
8. Self-destructive behaviors;
9. Excessive controlling by either victims or other family members;
10. Abusive language or behaviors;
11. Overreaction to daily stressors.

Sachnow's (1993) research uncovered a possible pattern with patients diagnosed with Borderline Personality Disorder (BPD). Specifically, Sachnow found that patients with BPD who report that their parents abused them are more likely to have grandparents who suffer from affective disorders, substance abuse, and anxiety disorders and parents who are more likely to have personality disturbances. These patterns of behavior are generational consequences of trauma or chiasmal effects that spread from the trauma victims throughout the rest of the family environment (Figley, 1989).

The chronic anxiety inherent in families with traumatized members is associated with three clusters of symptoms in non-traumatized members (Osofsky, Wewers, Hann, & Fick, 1993). Cluster one is composed of psychic consequences internalized to avoid

painful affect. These symptoms include denial, repressed memories, and dissociation. Osofsky et al. discovered that young people who exhibit this set of symptoms are often self-destructive. These behaviors replace internal avoidance techniques because internalizing loses its effectiveness over time. Cluster two consists of symptoms that focus on cutting off from the outside world, which limits interests and increases feelings of estrangement. Cluster three includes impaired memory, phobic behaviors, and restricted cognitions.

Some chiasmal effects are termed Secondary Traumatic Stress Disorder (STSD; Figley, 1998). STSD may result in a sense of helplessness, confusion, and isolation. The presence of PTSD in family members who are war veterans often results in entire families struggling with self-disclosure, expressiveness, hostility, and anger. When measured by the Family Environment Scale (Moos & Moos, 1994) subscales, the families of veterans with PTSD exhibit lower expressiveness and cohesiveness and higher conflict than families of veterans without PTSD (Solomon, Mikulincer, Fried, & Wosner, 1987). Increased conflict, aggression, and Emotional Cutoff mark current family environments of victims of childhood trauma (Hendrix, Jurich, & Schumm, 1995). Cutoff and conflict often characterize relationships between husbands and wives who have been raped (Gilbert, 1998). While nobody doubts that trauma has an impact on entire families, these results identify a pattern of decreased cohesion, increased conflict and control, limited independence, lack of expressiveness, and disorganization.

Cohesion. Low family cohesion predicts maladjustment, even when researchers remove variance due to physical abuse or psychological maltreatment (Higgins &

McCabe, 2000). Families that lack cohesion risk higher levels of physical abuse and psychological maltreatment than cohesive families. When abuse victims marry into new families, they may be unable to consider their own needs before their partners (Meyers, 1997). This condition results in a high degree of fusion with their partner, leaving trauma victims devoid of self-protective boundaries and more vulnerable to abuse within their new families.

Family cohesion may buffer the effects of secondary stress, but it comes at a price (Garmezy, 1993; Nelson & Wampler, 2000). Cohesion facilitates healing for victims, while draining some family members of the energy needed for daily tasks. Weist et al. (1995) report that some non-victim female children of trauma victims from cohesive and supportive families are rated more poorly by teachers and receive worse grades than children whose families have not experienced trauma. Weist et al. believe that these young women respond to secondary traumatic stress by turning their energy towards caregiving and away from school activities.

The personality of the family members influence the benefit they receive from cohesive families. Beck (1983) describes sociotropy as maladaptive forms of sociality. Sociotropic individuals are invested in positive social interchange and in obtaining help, support, reassurance, and regard. Hence, they are proposed to be particularly vulnerable following life events that represent to them a loss of family support. Significant relationships exist between symptoms of PTSD and depression and measures of sociotropy (Kolts, Robinson, & Tracy 2004).

Conflict. Conflict often results when trauma shatters the family role structures (Figley, 1989; Remer & Elliot, 1988). Whenever family members' roles change, other members are forced to adapt their roles, an adjustment that is not always welcome. Roles may also conflict when trauma creates a role that does not translate into the current family structures (Jehu, 1992) or when trauma causes partners to be revolted by or ambivalent about sex (Remer & Elliot, 1988). Conflict occurs when traumatized partners believe that non-victim partners do not understand. Such a dynamic becomes more likely as the time between the traumatic event and the telling of the event grows longer because partners are at different stages in their recoveries (Figley, 1989). Conflict may also occur between traumatized fathers and their sons in response to boys' aggressive play that may be a re-enactment of the fathers' trauma (McFarlane & van der Kolk, 1996; Solomon, 1988; van der Kolk, 1996) and also when adolescents feel trapped by their families' situations yet cannot turn to parents for help (Warner & Weist, 1996). The result of conflict is an increase in trauma related symptoms (e.g., dissociation; Putnam, 1996).

Control. Overcontrol between spouses may also increase in response to trauma (Gilbert, 1998; Mio & Foster, 1991; Morissette, 1993; Silverman, 1978). Control is identified as a main contributor in 50% to 80% of divorces when female partners were raped (Gilbert, 1998) and 38% of divorces among war veterans returning from Vietnam (Hendrix et al., 1995). Overcontrolling families create an imbalance that impedes effective communication and often have family members who express experiences of inner emptiness, meaninglessness, futility, and despair (Fogarty, 1976). Overprotecting is an effort to increase control in family environments in order to decrease a sense of

frustration, shame, helplessness, denial, and guilt (Mio & Foster, 1991; Silverman, 1978). Overprotecting deteriorates healthy dyadic functioning because it diminishes communication (Kerr & Bowen, 1988; Mason, 1990).).

Jehu (1992) describes the pursuer/distancer dynamic within traumatic relationships, in which one partner perceives his/her needs will be met by increased closeness to the other partner, who in turn perceives that their needs will be met by increased distance. Compassion fatigue fuels this dynamic when prolonged exposure to the sufferers is combined with a failure to assimilate or accommodate traumatic information, causing the consequences of emotional connection to equal or outweigh the emotional discomfort (Figley, 1998, p. 17). Figley (1998) believes this form of controlling behavior tends to drive partners apart, increase stress, and make healthy communication difficult.

Independence. Williams (1998) determine that many traumatized parents struggle to balance safety with independence. For children, limited independence decreases the experiences that positively affect the pruning of synaptic pathways and connections in the brain (Pynoos & Eth, 1986). For adolescents, parents who punish attempts at independence fail to sufficiently aid their teenagers in developing autonomy, and leave them without the knowledge and resources to be independent in the future (Williams, 1998).

Expressiveness. Failure to express emotion helps transmit the effects of trauma from generation to generation. Traumatized families struggle to express emotions because the emotions are intense and painful. Even children who show resilience in

traumatized families experience difficulty expressing emotions in interpersonal relationships when they are 30 years old (Zimrin, 1986). Traumatized parents may have trouble handling their own grief, limiting their availability to guide children in the development of healthy emotional expression (Williams, 1998).

Organization. The experience of trauma is related to a decrease in clearly organized and structured family activities and responsibilities (Miller, 1996). This experience increases the likelihood that victims are psychologically symptomatic. For example, when parents experience Borderline Personality Disorder symptoms, families experience significant decreases in organization (Feldman, Zelkowitz, Weiss, & Vogel, 1995). Trauma appears to inhibit family organization, making trauma victims more vulnerable to psychological symptoms that may further deteriorate family organization.

Social Support. Social support within families appears to moderate the impact of bifurcation points. When trauma victims perceive their families as supportive (Nash et al., 1993) and directly communicate about the traumatic experience with them (Quarentelli, 1985), these victims experience less psychological distress. Family environments that encourage victims to talk allow effective processing of traumatic events, which decreases the probability of developing PTSD after traumas (Foa & Riggs, 1994; Weist, Freedman, Paskewitz, Proescher, & Flaherty, 1995). When the traumas take place before families of procreation are created, as in the case of adult survivors of childhood abuse, abuse victims indicate that healthy spouses help them to feel support and give them positive working models (Valentine & Feinauer, 1993). The efficacy of social support is further documented in studies of people who use coping skills to handle

trauma. Garmezy (1993) indicates that even resilient child abuse survivors are less likely to be happy at age 30. Although stress may accumulate to erode resilience over time, Garmezy found social support to be the only variable that is resistant to the erosion of resilience. The more that families emotionally support their traumatized members, the greater the likelihood of healthy psychological functioning for trauma victims.

In sum, trauma impacts family roles (Sadler & Edwards, 1987), as well as family levels of conflict and control (Gilbert, 1998), expressiveness (Reiker & Carmen, 1986), independence (Williams, 1998), cohesion (Garmezy, 1993; Jehu, 1992) and organization (Feldman, Zelkowitz, Weiss, & Vogel, 1995). The relationship between family environments and trauma is far from linear. Just as trauma alters family environments, toxic family environments add to the pathological effects of trauma (Alexander & Shaeffer 1994; Bardenhagen, 1998; Higgins & McCabe, 2000; Putnam, 1996). Trauma induces a cycle among some families in which the effects of trauma and family environment amplify each other.

Integration of Schemas, Differentiation and Traumatic Family Environments

Schemas, differentiation of family members, and the family environment created when one or more family members suffers trauma interact to influence psychopathology of all family members. This section provides an integration of the literature concerning these constructs and specifies the particular interactions to be examined in this study.

Trauma and schemas. Traumas taking place during childhood or adulthood, whether sexual, emotional, or physical, all have one thing in common: their ability to influence the mental schemas of survivors (Terr, 1991). Although schemas are resistant to

change, trauma contributes to maladaptive schema development. Researchers suggest a relationship between trauma and self-esteem (Black & Pearlman, 1997), self-safety (Janoff-Bulman, 1989), helplessness (Roth & Newman, 1992), trust (Behnia, 1997) responsibility and defectiveness (Foa & Riggs, 1994; Ross, 2000). Ross's model (2000) suggests that victims fail to assimilate trauma into their world schemas, resulting in high anxiety, which in turn engenders maladaptive self-schemas to avoid the anxiety. Ross (2000) maintains that victims' central goals are to regain and maintain a sense of control. Victims accomplish this goal by falsely believing that they are responsible for, or deserved, the abuse. The gain for victims is short-term relief from anxiety. Acting on this new belief of self-blame, victims change behaviors to protect themselves. When abuse continues despite behavior change, a secondary schema of defectiveness or incompetence may develop.

Without experiencing traumatic events, humans typically develop self-safety schemas that include a sense of invulnerability (Janoff-Bulman, 1989). People hold these self-safety schemas even though mass media and life experiences expose people to car accidents, crimes, and deadly illness almost daily. Many of the trauma victims who participated in Janoff-Bulman's (1989) research reported that they never believed traumatic events could happen to them, yet experienced intense feelings of vulnerability after traumatic events. The impact of vulnerability is magnified by helplessness, another common maladaptive schema found in trauma survivors (Roth & Newman, 1992).

Trust schemas are particularly vulnerable to trauma (Behnia, 1997). The loss of trust is insidious because it leads to behaviors that limit interactions that encourage trust.

Mistrust schemas are likely to develop when human behaviors cause the trauma as opposed to natural disasters (Biegel & Berren, 1985), making child abuse survivors especially vulnerable (Behnia, 1997). The nature of child abuse targets trust and uses individuals' trust against them. In these cases, victims associate trust with emotional and perhaps physical pain. Children's survival requires attachment, attachment requires trust, and trust leads victimized children into proximity of abuse (Ross, 2000). In these cases, trust is directly associated with trauma, making adaptive trust schemas difficult to develop.

Trauma victims struggle to construct adaptive schemas because of difficulties with emotional regulation (Znof & Grawe, 2000), self-reinforcing behaviors (Ehlers & Clark, 2000; Horowitz, 1992), preoccupation with the original trauma (Waller & Smith, 1994), chronic intrusive traumatic memories (Markowitsch et al., 1998), a sense of lost continuity (Steele, 1989), lack of schema flexibility (Newman et al., 1997), and dichotomous thinking (Arntz, 1994). Because inconsistency between schema-driven expectations and traumatic events results in negative affect, regulation of these unpleasant emotions may be understood as a consistency safeguard (Znof & Grawe, 2000). Emotional regulation is positive when it prevents high levels of inconsistency from hindering people. However, Znof and Grawe (2000) believe that overregulation leads psychological functioning to deteriorate. Trauma victims must reduce emotional reactions to the inconsistency between schemas and trauma before assimilating the new information; yet, they must also allow the normal expression of emotions.

Maladaptive schemas lead to maladaptive behaviors, which are self-reinforcing. When a maladaptive schema of the world develops in response to trauma, people perceive normal activities as dangerous (Ehlers & Clark, 2000). The slow change in schemas described by Horowitz (1992) is the result of encounters with mildly discrepant information. Many traumatized people fail to have these corrective encounters because maladaptive schemas of the world restrict their routine (Mason, 1990). Restricting routines is a type of underfunctioning that confirms helplessness schemas.

Trauma victims who are consumed with their trauma reinforce their maladaptive schemas (Waller & Smith, 1994). When maladaptive schemas take hold, they are difficult to change because victims often ignore discrepant information. Waller and Smith's (1994) research using the Stroop paradigm (Stroop, 1935) confirms that trauma victims with psychological symptoms focus longer on information relating to trauma than nonvictims. Waller and Smith correlated this information processing bias to self-blame schemas when comparing women who have experienced trauma to those who have not. These researchers believe that evidence supporting maladaptive schemas is frequently active in the mind, causing victims to overlook information that facilitates more adaptive schemas.

The inability to recall the entire trauma may facilitate beliefs that victims are responsible for their trauma (Ehlers & Clark, 2000). People with chronic PTSD often experience serious disorganization of their memories, making it difficult to organize recollections of traumatic experiences. These chaotic memories make creating an

accurate account of the event difficult. Incomplete memories may be organized to support maladaptive schemas of self-blame.

Maladaptive schemas lack flexibility (Newman et al., 1997), which is reflected in dichotomous thinking (Arntz, 1994). Adaptive schemas develop as a result of experiencing a world of both positive and negative events. Most adults perceive that almost all people and situations fall somewhere between positive and negative, or good and bad. Trauma victims who split perceptions into good or bad lack the flexibility to see the good in what they determine as bad and vice-versa. Experiences that counter maladaptive schemas and fall into the category opposing these schemas are ignored. Arntz (1994) believes that lack of flexibility is related to being stuck in childhood thinking, an idea supported by research on cognitive regression in trauma victims (Parson, 1994). When trauma victims hold a maladaptive self-schema that they are bad or defective, cognitive regression is realized in a personalization thinking error, which excessively relates external events to the self (Westin, 1991). This egocentricity leads many traumatized individuals to blame themselves for what goes wrong in their environments. In these instances, egocentric thinking and self-blame are combined to reinforce maladaptive self-schemas. This combination leads to a phenomenon in which trauma victims may perceive that other trauma victims are not responsible for their abuse, yet they fail to hold the same perceptions about themselves.

People who have chronic contradictions in their schematic organization experience chronic anxiety (Znoj & Grawe, 2000). Trauma survivors may develop symptoms to minimize these uncomfortable feelings when discrepant information is

encountered (McCann et al., 1988). McCann et al. indicate that some psychological symptoms reflect a direct attempt to reduce anxiety through avoidance, such as denial, psychic numbing, and emotional constriction. Indirect attempts to avoid uncomfortable feelings involve accommodating schemas to become maladaptive, thus relieving the contradiction.

Researchers have suggested that people who believe they are neither competent nor self-reliant (Foa & Riggs, 1994), unsafe, (Arntz, 1994; Janoff-Bulman, 1989), inherently bad (Arntz, 1994) or helpless (Arntz, 1994; Seligman et al., 1984) are more likely to experience psychopathological symptoms. Traumatogenic maladaptive schemas are associated with many long-term symptoms, such as self-harm, depression, panic, and substance abuse (Kuyken & Brewin, 1999). Deliberate self-harm is correlated with low self-esteem in women who experienced childhood sexual abuse (Low, Jones, MacLeod, Power, & Dugan, 2000). Maladaptive schemas of the world are related to increases in the frequency of panic attacks in trauma victims when maladaptive schemas bias encounters with uncontrollable situations and cause them to appear more dangerous than these situations are in reality (Falsetti & Resnick, 1997). Trauma victims may respond to these symptoms by self-medicating. For example, substance abuse is more common in trauma victims than in non-victims (Falsetti & Resnick, 2000a). Furthermore, individuals with PTSD and complex PTSD experience significantly more maladaptive schemas than those without PTSD (Newman et al., 1997). Complex PTSD includes the features of PTSD plus dissociation, relationship difficulties, revictimization, somatization, affect dysregulation, and disruptions of identity (Newman et al., 1997; Pearlman, 2001). Pearlman believes

trauma victims maintain symptoms to create adaptive meaning, which may lead to a short-term reduction in anxiety, but eventually result in additional long-term symptoms.

Traumatogenic schemas and family environments. Since maladaptive schemas are often correlated with psychological symptoms, transmitting traumatic symptoms from victims to family members may come from an attack on the members' schemas. Family members often experience the same assault on their schemas as victims (Gilbert, 1998; Rosenthal et al., 1987). Just as it is required of trauma victims, non-victims must assimilate and accommodate the new information provided by the traumas. When faced with the reality of traumas, family members may attempt to answer for themselves the five victim questions: (1) What happened? (2) Why did it happen? (3) Why did I act as I did then? (4) Why have I acted as I have since? and (5) If it happens again (or to me), will I be able to cope? (Figley, 1998). The need to make sense of other family members' traumatic experiences and the aftermath may result in secondary traumatic stress responses, (Gilbert, 1998), stress responses that are most likely when the answers to Figley's five questions are incongruent with their current schemas.

Traumatic events often have an impact on non-traumatized family members, in part because all family members experience overwhelming evidence that the world is not safe (Richters, 1993) and that other cannot be trusted (Williams, 1998). Some family members approach each day with the sense that something bad may happen that they cannot defend against. Richters (1993) believes that chronic anxiety associated with holding so called world is bad schemas is intolerable and may compel family members to dissociate from negative emotions. Emotionally connecting to children, especially when

children hurt, may trigger painful memories in parents, causing some parents to avoid caring for their distressed children (Williams, 1998). This avoidance creates a sense of failure in parents that may contribute to schemas of worthlessness and mistrust in the children. Painful affect may also factor into the development of mistrust schemas. When individuals feel vulnerable, uncomfortable affective and physiological responses are often combined to increase secondary stress symptoms (Ososfsky, 1998). The affective cost of trusting others may become too great such that maladaptive schemas of mistrust may be reinforced.

Traumatogenic maladaptive mistrust and world is bad schemas may directly influence the amount of control in families (Jehu, 1992). Overcontrolling family behaviors may develop indirectly when family members use up their energy in relationship with highly anxious trauma victims, thereby diverting energy from other activities and reducing emotional flexibility (Gilbert, 1998). Enmeshment also reduces flexibility, making families with poorly differentiated parents vulnerable to any disruption in emotional equilibrium (Morissette, 1993). Bowen (1988) states that high levels of anxiety and low flexibility lead parents to attempt to force other members of their family environments to think and act like them. The result is high levels of control that often includes child abuse trauma (Burke et al., 1982; Green et al., 1991; James, 1994). When families overcontrol the lives of their members, these families deliver implicit messages that victims cannot take care of themselves, which facilitate maladaptive schemas of helplessness in non-traumatized family members (Williams, 1998).

Just as family environments help to mold schemas, adaptive schemas may buffer the negative impacts on families. For example, Weist et al. (1995) found that a problem-focused coping style most effectively protects girls from the effects of stress. Weist et al. suggest that this coping style may result from adaptive schemas, including that the self is competent and the world is predictable. Children of trauma victims are often vulnerable to secondary stress via an external locus of control, which is derived from self-schemas of incompetence, world-schemas of randomness, or both (Weist et al., 1995). When adolescent children believe that the world does not respond to their goal-directed behaviors, the impact of trauma on family members may leave them feeling vulnerable.

Family support may mitigate the development of traumatogenic schemas about others (Galloucis, Silverman, & Francek, 2000). Adaptive schemas of other-esteem, other-intimacy, and other-trust are strongly associated with perceptions of social support. Weist et al. (1995) hypothesize that positive family interactions provide information that is inconsistent with maladaptive other-schemas. Social support may validate victims' posttrauma feelings, counteracting the self-schemas that victims are incompetent in dealing with the trauma. Providing information that is inconsistent with traumas is identified as a main asset in supportive relationships. (Neuman & Gamble, 1995).

Many children survive traumatized family environments to become happy, healthy people (Festinger, 1983). Zimrin (1986) notes that many child abuse survivors in her study did not feel stupid, worthless, or suicidal. Many trauma survivors are intelligent and maintain a positive outlook on life. Factors that protect against trauma's effects include high self-esteem, internal locus of control, high intelligence, personal efficacy,

and good problem-solving skills (Jenkins & Bell, 1998). Garnezy (1993) identifies three additional protective factors: (1) temperament factors, including high activity level, reflectiveness, intelligence and positive responsiveness; (2) families that exhibit warmth and cohesion; and (3) strong external support, such as a neighbor, teacher, or youth minister.

Differentiation of family members may influence the impact of trauma on the schemas, family environment, and symptoms of victims and non-victim family members. Bowen's theory of differentiation (Kerr & Bowen, 1988) can be integrated with Ross's (2000) ideas on developing maladaptive schemas based on the locus of control shift. Since the cognitive system, the source of schemas, becomes subject to emotional processes that include attachment, it is possible that the cognitive system may construct schemas to satisfy the emotional process needs of togetherness or attachment. Theoretically, when children shift the locus of control for abuse from blaming others to blaming themselves, it is not done after a contemplative review of their situations, but in response to anxiety that comes from unmet needs for togetherness. Because differentiation is a developmental process, child abuse victims are more vulnerable to the influence of affective and emotional processes, which may increase the likelihood of the locus of control shift.

Poor differentiation may facilitate the chiasmal transference of symptoms among family members (Figley, 1989). Rosenheck and Nathan (1985) describe children of war veterans who present with symptoms in which they appear to be experiencing the trauma themselves, in reaction to their parents' traumas. Steinberg (1998) cites several studies

where children and adolescents develop symptoms of PTSD having never experienced a trauma first hand. These children of trauma victims experience the full range of PTSD symptoms as outlined in the *DSM- IV* (American Psychiatric Association, 1994; Murphy, Pynoos, & James, 1998). Epstein (1982) suggests that those trauma victims with enmeshed adult children have similar intrusive dreams, phobias, and misperceptions. Some adult children of Holocaust survivors experience anniversary reactions to their parents' significant dates (Axelrod, Schnipper, & Rau, 1980).

People act to reduce anxiety, the most prominent artifact of trauma, because it undermines a feeling of emotional well-being (Kerr & Bowen, 1988). When anxiety escalates, the influence of the togetherness force increases, causing poorly differentiated people to become more enmeshed. This state is encouraged by many of the psychological symptoms of trauma victims (Mallow, 2000). Increased enmeshment triggers pressure from individuation forces (Kerr & Bowen, 1988). Poorly differentiated people often react to this pressure by cutting off emotionally. When the anxiety common in trauma combines with poor differentiation, wild swings between enmeshment and cutoff are expected (Mallow, 2000).

Abusive families create family environments that inhibit children's differentiation development (Cicchetti & Howes, 1991). Traumatic neglect often leaves children to care for themselves and their parents (Sandoz, 1998). Children whose parents have survived childhood sexual abuse often distort boundaries between their parents and themselves. (Rosenthal et al., 1987). Sometimes, the boundaries blur so severely that parents and children reverse roles such that children may assume the role of caretaker in their

relationships with their parents. This role reversal makes it difficult for children to recognize their own needs, causing them to struggle with taking care of themselves and being alone. Much of their energy and emotional flexibility is used up by constantly monitoring the behavior of their parents, which helps children avoid further abuse (Morrisette, 1993) but uses up energy required for differentiation (Gibson & Donigan, 1993). Constant monitoring of an abusive parent leads children to fuse with them and report a lack of feeling separate (Rieker & Carmen, 1986). In abusive families, children exist to satisfy the needs of adults, and sacrifice the self to maintain ties to parents. As children move into middle childhood and adolescence, they are unable to separate their own feelings from parental needs. Meyers (1997) believes that lower differentiation in trauma victims is the result of an impaired capacity for emotional regulation and limited ability to form appropriate adult relationships. The inability to regulate emotion causes people to become increasingly subject to emotional processes. Meyers argues that low differentiation in traumatized children is correlated with enmeshment, where others define the children's self. In childhood, enmeshment is a survival tool, but in adulthood, it becomes an ineffective method for managing stressful family environments.

Purpose of the Study

The purpose of this study is to examine the relationship between schemas, differentiation levels, family environments, and psychopathology. More specifically, this study was intended to support the concept of maladaptive schemas as a main source of chiasmal transference of symptoms among family members. Differentiation levels of victims and family members were investigated as buffers or facilitators of chiasmal

transference of psychological symptoms. This study was also intended to support some tenets of chaos theory as it relates to family dynamics. Finally, the relationship between improvement of functioning in trauma victims and their family environments were considered.

Hypotheses

This study expected to find support for four major hypotheses. The first hypothesis was that trauma victims and family members would have more maladaptive schemas and more psychological symptoms than the normal population. The second hypothesis was that an inverse relationship existed between trauma victims' and family members' differentiation scores and both the number of maladaptive schemas and psychological symptoms for victims and family members. The third hypothesis stated that all family members would rate families as more chaotic one month following the treatment of traumatized members and less chaotic after six months when compared to initial assessments. The final hypothesis was that trauma victims and family members would report fewer maladaptive schemas, increased differentiation scores, and fewer psychological symptoms one month and six months following treatment, when compared to the initial assessment.

CHAPTER III

METHOD

Participants

Participants in this study were patients at the Ross Trauma Institute located in the Timberlawn Psychiatric Hospital in Dallas, Texas and their families. Eighty percent of the participants were women. A poll by Ross (March, 2001) revealed that approximately half of the patients have either bisexual or lesbian sexual orientation. In this study, 28 percent of participants were homosexual or bisexual. The patients were between 24 and 60 years of age and the mean age was 40.1.

Hospitalized participants have experienced significant trauma in their lives. For most, the trauma involved childhood physical or sexual abuse. Some of the patients likely suffered rape or other abuse as adults, including war related trauma. Trauma patients typically manifest symptoms associated with a variety of Axis I and Axis II disorders as outlined in the *Diagnostic and Statistical Manual of the American Psychiatric Association (DSM IV)* (American Psychiatric Association, 1994). The most common Axis I symptoms among trauma survivors in the Ross Institutes are dissociative, including Dissociative Identity Disorder and Dissociative Disorder Not Otherwise Specified. Mood Disorders are also common, especially Major Depressive Disorder. Patients also exhibited symptoms of Anxiety Disorders, including obsessions, compulsions, panic attacks, and flashbacks. A few patients may have had eating disturbances, ranging from

compulsive overeating to Bulimia Nervosa and Anorexia Nervosa, although these disorders were not measured. The most common Axis II diagnosis was Borderline Personality Disorder.

The mean number of participants' previous psychiatric hospitalizations was 5.5, with only two participants entering the hospital for the first time. Forty five percent of the participants had three or more hospitalizations in the past ten years and 22.9 percent with more than six hospitalizations.

Current family members of the hospitalized trauma patients were included in the study. This researcher defined current family members as people who share a household, including spouses, heterosexual or homosexual partners, children of either the trauma patient or the partner or spouse, and parents and grandparents of the trauma victim. Children participants were required to be age 13 or older due to the developmental nature of the instruments and sensitive nature of the questions. The study had an extremely poor response rate from families, with no family members completing the instruments on all three administrations.

Program and Setting

The Ross Trauma Institute is a private corporation that manages psychiatric treatment programs and is currently contracted to provide management and treatment services to Timberlawn Mental Health System in Dallas, Texas, Forest View Hospital in Grand Rapids, Michigan, and Del Amo Hospital in Torrance, California. The Ross Institute provides inpatient and partial outpatient programs designed to treat mental health issues related to psychological trauma. Ross Institute programs are based on the

trauma model of psychopathology (Ross, 2000). According to this model, trauma is a major risk factor for many mental disorders and needs to be addressed in treatment.

Procedure

Participants were recruited from the Ross Trauma Institute at Forest View Psychiatric Hospital in Grand Rapids, Michigan and Timberlawn Psychiatric Hospital in Dallas, Texas. The researcher, practicum students, or Ross Trauma Institute therapists distributed flyers to patients and announced the study during community group. The flyer (Appendix A) explained the study briefly and indicated how interested people may participate. Participation required the patient to contact the researcher, which was typically done following the announcement. After patients expressed interest, the researcher read them the statement located in Appendix B. The researcher made certain that participants were told that refusal to participate would not influence their treatment and consent to participate meant that the same measures would be sent to participants' current family members. After receiving verbal consent, the researcher asked participants to sign a consent form (Appendix C) and gave them a packet that included a request for results and drawing entry (Appendix D), a demographic information form (Appendix E), and the instruments (Appendix F and G). The instruments were self-report and required no specific administration procedures. Participants were encouraged to return the packet within three days.

The same assessments were sent to family members. The assessment packet for families included a consent form, a request for results and drawing entry, a demographic information form, and the instruments. The packets were be delivered by mail to patients'

homes for family members to complete and return to the researcher by mail via a stamped, pre-addressed envelope provided by the researcher. Preadolescent children (12 and younger) were asked not to participate. Participants were instructed in the introductory letter to return responses three days from the initial receipt. In appreciation for their responses, inpatient and family participants were entered into a drawing with a chance to win \$100. One \$100 dollar prize was awarded for every 20 packets returned, making the odds of winning approximately 1:20. To enter the drawing, participants completed a card with a name and address of where the winnings would be sent. The researcher separated the drawing slips from the completed measures upon receipt. Six prizes were awarded.

After one month, and again at six months after the initial administration, the same questionnaires were sent to the participants and their families. I assigned each participant a number to connect the patients with their families and to keep the identifying information separate to help insure confidentiality. At the end of the data collection, I destroyed identifying information, leaving only the participant numbers.

Measures

Differentiation of Self Inventory (DSI). The amount of research that uses instruments to operationalize Bowen's constructs of differentiation of self is limited (Bartle, 1993). Skowron and Friedlander (1998) developed the Differentiation of Self Inventory to assist with researching the tenants of Bowen theory. Their goal was to create an instrument that tests theoretical assumptions, assesses differences in adult functioning, and evaluates psychotherapeutic outcomes from a systemic perspective. This instrument

measures the intrapsychic and the interpersonal components of differentiation. The intrapsychic components relate to thinking and feeling and the interpersonal components relate to togetherness and separateness. This instrument differs from other differentiation instruments because it allows researchers to operationalize the interpersonal constructs of fusion and Emotional Cutoff.

The Differentiation of Self Inventory is a 43-item self-report assessment. Using Cronbach's alpha, internal consistency was highly reliable. Reliabilities for the DSI total scale and each of the four subscales were: DSI total, .88; Emotional Reactivity, .83; I-Position, .80; Emotional Cutoff, .80; and Fusion with Others, .82. Correlation coefficients between the subscales and the total were moderate to high, ranging from .59 to .80. Correlation coefficients among the subscales were moderate to low, ranging from .45 to .17. When compared to the Personal Authority in the Family Questionnaire (PAFSQ; Bray, Williamson, & Malone, 1984), Skowron, Holmes, and Sabatelli (2003), using factorial analysis, reveal that the I-Position subscale loads with the Personal Authority subscale on the PAFSQ, and the Emotional Cutoff and Fusion with Others subscales load with Intergenerational Intimacy and Intergenerational Fusion subscales on the PAFSQ.

The validity of the DSI appears high for two Bowen constructs. Scores on the DSI support Bowen's idea that highly differentiated individuals are more free of symptoms and are generally better adjusted, and that highly differentiated people are more satisfied with marriage than less differentiated people. This instrument uses a six-point likert-type scale for all items, ranging from one (not at all true of me) to six (very true of me). Items are added together to determine subscale scores. Thirty-Three of the items are reversed

scored. The Emotional Reactivity subscale has 11 items to measure emotional flooding, emotional lability, and hypersensitivity. High scores mean that people are not emotionally reactive. The range of possible scores on the Emotional Reactivity subscale is 11-66. The I-Position subscale has 11 items. High scores indicate a clearly defined sense of self and an ability to thoughtfully adhere to personal convictions when experiencing pressure to do otherwise. The range of possible scores on the I-Position scale is 11-66. The Emotional Cutoff subscale includes 12 items. High scores indicate that participants feel less threatened by intimacy and less vulnerable in relation to others. Low scores on the Emotional Cutoff scale reflect fears of engulfment and behavioral defenses, such as overfunctioning, distancing, or denial. The range of possible scores on the Emotional Cutoff scale is 12-72. The Fusion with Others scale has nine items to reflect overinvolvement with others that may take the form of triangling or overidentification with parents. High scores mean that participants are less likely to need others to maintain mental health. The range of scores on the Fusion with Others scale is 9-54 (Skowron & Friedlander, 1998).

Family Environment Scale (FES). Moos and Moos (1994) developed The Family Environment Scale to gain a naturalistic understanding of the social environment of families. Moos and Moos intended the FES to measure broad constructs and include items that are relatively diverse in content. The FES has 90 items in 10 subscales that are organized under three dimensions: (1) Relationship, (2) Personal Growth, and (3) System Maintenance. Each subscale has nine items. The range of scores for all FES subscales is 9-54. This instrument uses a self-report, true or false format. Participants select “true” in

response to the prompt “If you think a statement is true or mostly true of your **current** family, circle true.” The select “false” in response to the stem “If you think a statement is false or mostly false of your **current** family, circle false.” Scoring instructions provided by the manual indicate whether a true or false response is scored for each item.

The relationship dimension of the FES has three subscales: cohesion, expressiveness, and conflict. The cohesion subscale measures the degree of commitment, help, and support family members provide for one another. High scores reflect high levels of cohesion. The expressiveness subscale measures the degree that family members encourage each other to express their feelings directly. High scores reflect high levels of expressiveness. The conflict subscale reflects the amount of openly expressed anger and conflict among family members. High scores reflect high levels of conflict.

The personal growth dimension of the FES has five subscales: independence, achievement orientation, intellectual-cultural orientation, active recreational orientation, and moral-religious emphasis. This study only uses the independence subscale, which measures the extent to which family members are assertive, self-sufficient, and able to make decisions for themselves. High scores reflect greater independence.

The third dimension, system maintenance, has two subscales: organization and control. The control subscale reflects how much current families use set rules and procedures to run family life. High scores reflect high levels of control within families. The organization subscale reflects the degree of importance families place on clear organization and structure when the families plan activities and assign responsibilities. High scores identify families that are organized and structured.

Test-retest reliability scores are reported in Table 1. The two-month test-retest reliabilities are all in an acceptable range. The lowest test-retest reliability coefficient is for the independence subscale with a correlation of .68 and the highest is .86 for the cohesion subscale. After four months, test-retest reliabilities remain relatively high. Additional research indicates strong one-week test-retest reliability (Gehring & Feldman, 1988). Moos and Moos (1994) report longitudinal studies as long as nine years that suggest moderate long-term stability.

The FES appears to be a valid reflection of the family environment and correlates well with other tests. Oliver and Paull (1995) found that the cohesion subscale correlates highly with both the maternal acceptance and paternal acceptance scales on the Child Report of Parental Behavior Inventory (CRPBI) developed by Shaeffer (1965; as cited in Moos & Moos, 1994). The subscale scores of cohesion, expressiveness, and independence correlate positively, and the conflict and control subscales correlate negatively with the support factor of The Block Environmental Questionnaire (Hur & Bouchard, 1995). When comparing the FES to the Personal Authority in the Family System Questionnaire (Bray, Williamson, & Malone, 1984), an increase in the FES conflict subscale predicts less intergenerational intimacy and less intergenerational individuation on the PAFSQ, whereas higher levels of family cohesion on the FES predicts greater intergenerational intimacy scores on the PAFSQ (Johnson & McNeil, 1998). Greater amounts of family expressiveness on the FES predict more intergenerational individuation, more personal authority, less intergenerational intimidation, and less intergenerational triangulation on the PAFSQ. The FES is the most

Table 1. Family Environment Scale Form R: Internal Consistencies, Corrected Average Item-Subscales, and 2-Month and 4-Month Test-retest Reliabilities

Subscale	Internal Consistency (N=1,067)	Corrected Average Item Subscale Correlations (N=1,067)	2-Month Test- Retest Reliability (N=47)	4-Month Subscale Stability (N=35)
Cohesion	.78	.44	.86	.72
Expressiveness	.69	.34	.73	.70
Conflict	.75	.43	.85	.66
Independence	.61	.27	.68	.54
Control	.67	.34	.77	.78
Organization	.76	.44	.86	.72

(Moos & Moos, 1994)

widely used and confirmed self-report measure of family functioning, and is often the standard for determining the criterion validity of new measures (Grotevant & Carlson, 1989).

Young Schema Questionnaire (YSQ). This measure identifies whether or not individuals hold maladaptive schemas. Young identifies 16 different schemas within six higher-order areas of functioning: (1) instability/disconnection, (2) impaired autonomy, (3) undesirability, (4) restricted self-expression, (5) restricted gratification, and (6) impaired limits (Schmidt, Joiner, Young, & Telch, 1995). The six higher-order areas and their related schemas are found in Figure 2. All items are ranked on a likert-type scale from one to six, ranging from one, which indicates that the item is “completely untrue of me,” to six, which indicates that the item “describes me perfectly.” Each of the 16 maladaptive schemas is measured with three to five items for a total of 43 items. For each maladaptive schema subscale, if participants rank two or more items as three or higher,

participants will be classified as holding that schema. High scores for each schema indicate participants hold the schema more intensely. The number of possible schemas held by participants ranges from zero to 16. The intensity for each schema ranges from one to six and is calculated by adding the likert scores and dividing by the number of items attributed to each schema.

Test-retest reliability and internal consistency are adequate for the Young Schema Questionnaire. The split-half reliability coefficient is .76 and test-retest alpha is .90 (Schmidt, Joiner, Young, & Telch, 1995). Schmidt et al. found convergent and discriminant validity for the Young Schema Questionnaire when compared to measures of psychological distress, self-esteem, cognitive vulnerability for depression, and personality disorder symptoms. The Schema Questionnaire—Short Form used in this study was designed to measure 15 maladaptive schemas and is a briefer (75 item) instrument. Welburn, Coristine, Dagg, P, Pontefract, and Jordan, (2002) examined the psychometric properties of the YSQ with a sample of patients in a psychiatric day treatment program. The factor analysis supports the 15 schema subscales proposed by Young. These 15 subscales demonstrate good internal consistency. Wellburn et. al also examines the relationship between the YSQ subscales and psychiatric symptomatology. Results provide support for the construct validity of the YSQ, suggesting the importance of maladaptive schemas in the development and maintenance of psychiatric symptoms.



Figure 2. Young's schema hierarchy. Identifies six schema categories and 16 maladaptive schemas with short explanations. Derived from Schmidt, Joiner, Young, and Telch (1995).

Symptom Check List-90-Revised (SCL-90-R). The Symptom Checklist-90-Revised is a brief, multidimensional self-report inventory designed to screen for a broad range of psychological problems and symptoms of psychopathology (Derogatis, 1994). Therapists use the SCL-90-R to measure progress or outcomes in therapeutic settings. The SCL-90-R includes four norm groups: (1) Adult psychiatric outpatient, (2) Adult nonpatient, (3) Adult psychiatric inpatient, and (4) Adolescents. The measure assesses nine symptom dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Researchers may calculate a global indice called the Global Severity Index using all 90 of the items. High scores on the nine symptom dimensions and on the Global Severity Index reflect greater psychopathology. This study used only the global severity index. The global severity index is calculated by summing the responses on all items and then dividing the sum by the number of items marked (i.e., 90). Scores are then standardized into t-scores with a mean of 50 and a standard deviation of 10. As indicated by Derogatis, even if not all the items are marked, the global severity index will still be considered valid if at least 72 items are marked.

Internal consistency and test-retest reliability for the SCL-90-R is reported in Table 2 (Derogatis, 1994). Coefficient alpha scores for internal consistency range from .77 to .90 and test-retest coefficients range from .68 to .90. Symptomatic volunteers and psychiatric outpatients participate in the internal consistency studies and psychiatric outpatients participate in the test-retest studies. The time span between test and retest is 10 weeks for study one and one week for study two. Internal structure matched

theoretical structure on most of the dimensions with some overlap between anxiety and phobia dimensions and splitting among items on the psychoticism dimension. Variance between genders for all nine subscales is low, as indicated by correlations between males and females ranging from .60 to .85. Convergent-discriminant validity is high when compared to the Minnesota Multiphasic Personality Inventory and Middlesex Hospital questionnaire. Ample evidence of convergent-discriminant between SCL-90-R subscales and other measures is outlined by Derogatis (1994).

Design and Statistics

This study was correlational with repeated measures over time. The study's variables included individual scores and population norms. Individual data were collected on the FES, DSI, YSQ, and SCL-90-R and status (i.e., trauma patient, spouse, child, other). The FES was analyzed using subscale scores for cohesion, expressiveness, conflict, independence, control, and organization. Global scores and subscale scores for the DSI and global severity indices for the SCL-90-R were calculated. The YSQ variable reflected the number of maladaptive schemas each participant holds. Population norms of the FES, DSI, YSQ, and SCL-90-R were based on the research literature (e.g., Skowron & Friedlander, 1998; Schmidt, Joiner, Young, & Telch, 1995) and test manuals (e.g. Derogatis, 1994; Moos & Moos, 1994). Scores for the FES, DSI, YSQ, and SCL-90-R were collected on three occasions and computed average scores for the FES and DSI after each assessment.

Table 2. Internal Consistency and Test-Retest Reliability Coefficients for the Symptom Checklist 90-Revised.

	Internal Consistency		Test-Retest	
	(Coefficient α)			
	Study 1	Study 2	Study 1	Study 2
Somatization	.86	.86	.68	.86
Obsessive Compulsive	.86	.87	.70	.85
Interpersonal Sensitivity	.86	.84	.81	.83
Depression	.90	.90	.75	.82
Anxiety	.85	.88	.80	.80
Hostility	.84	.85	.73	.78
Phobic anxiety	.82	.89	.77	.90
Paranoid ideation	.80	.79	.83	.86
Psychoticism	.77	.80	.77	.84

Very little research has been done to determine appropriate power for repeated measure designs (Stevens, 1996). What work that has been done is not tenable for longitudinal analysis because it is confined to the single sample case. However, Stevens (1996) has reprinted a table by Green (1990) that used an estimated average correlation. To achieve a power level of .80 in detecting a medium effect size using an experimentwise alpha of .05, this study would require 30 participants per status group (i.e., patient, partner, child, other). The researcher estimated a 25% return rate on the family assessments based on research on mailing strategies (Burns, 2001; Hochstim, 1967; Newton, Stein, & Lucey, 1998). The incentive to be in a drawing was expected to ensure that the return rate holds based on research on the effect of money on return rates (Everett, Price, Bedell, & Telljohann, 1997). Therefore, the target sample size of patients and family members was 120. A failure to achieve 30 family participants resulted in excluding family members from the analyses. Each hypothesis was analyzed at the .01 level of significance due to the large number of hypotheses.

Hypotheses

Hypothesis One. Trauma victims and family members hold significantly more maladaptive schemas and indicate greater psychopathological distress on the initial assessment than the norm groups of the YSQ and SCL-90.

Hypothesis 1(a): Trauma victims and their families hold more maladaptive schemas than the normal population.

Hypothesis 1(b): Trauma victims and their families score higher on the Global Distress Indices of the SCL-90-R than the normal population.

Hypothesis 1(a) was unable to be tested because norms for the Young Schema Questionnaire (YSQ) were not available. Hypothesis 1(b) was tested by comparing the Global Indices scores on the SCL-90-R with the norms on the SCL-90-R. On the SCL-90R, adults were tested against non-hospitalized adult norms. Hypotheses 1(b) was analyzed with a t-test at each of the three administrations to certify that the data follow the established research regarding psychological symptoms.

Hypothesis Two. An inverse relationship exists between trauma victims and family members differentiation scores and the number of maladaptive schemas victims and family members hold and psychological symptoms.

Hypothesis 2(a): Global differentiation scores on the DSI correlate with the number of maladaptive schemas indicated on the YSQ and symptoms indicated on the SCL-90-R

A multiple regression was used to analyze hypothesis 2(a). To further understand hypothesis 2(a), DSI subscale scores were analyzed with a stepwise regression to identify which subscale scores are necessary to predict YSQ and SCL-90-R scores.

Hypothesis 2(b): The relationship between DSI, YSQ, and SCL-90-R holds over time.

This prediction was analyzed with a multiple regression and a stepwise regression using the DSI subscales at time one, two, and three.

Hypothesis Three. Families are rated by all participants as more chaotic one month following the treatment of traumatized members and less chaotic after six months

when compared to initial assessments. The organization subscale of the FES was added to further describe a chaotic family.

Hypothesis 3(a): Cohesion subscale scores decrease between time one and time two.

Hypothesis 3(b): Cohesion subscale scores increase between time two and time three.

Hypothesis 3(c): Expressiveness subscale scores decrease between time one and time two.

Hypothesis 3(d): Expressiveness subscale scores increase between time two and time three.

Hypothesis 3(e): Conflict subscale scores increase between time one and time two.

Hypothesis 3(f): Conflict subscale scores decrease between time two and time three.

Hypothesis 3(g): Independence subscale scores decrease between time one and time two.

Hypothesis 3(h): Independence subscale scores increase between time two and time three.

Hypothesis 3(i): Control subscale scores increase between time one and time two.

Hypothesis 3(j): Control subscale scores decrease between time two and time three.

Hypothesis 3(k): Organization subscale scores decrease between time one and time two.

Hypothesis 3(l): Organization subscale scores increase between time two and time three.

No chaos indice exists for the FES. Therefore, a separate one-tailed t-test was run on each of the six subscales for a total of 12 relationships.

Hypothesis Four. Trauma victims and family members report fewer maladaptive schemas, increased differentiation scores, and decreased psychological symptoms one month and six months following treatment when compared to the initial assessment.

Hypothesis 4(a): The number of maladaptive schemas held by participants decrease between time one and time two.

Hypothesis 4(b): The number of maladaptive schemas held by participants decrease between time one and time three.

Hypothesis 4(c): The global differentiation scores held by participants increase between time one and time two.

Hypothesis 4(d): The global differentiation scores held by participants increase between time one and time two.

Hypothesis 4(e): The participants' scores on the global distress indices of the SCL-90-R decrease between time one and time two.

Hypothesis 4(f): The participants' scores on the global distress indices of the SCL-90-R decrease between time one and time three.

This hypothesis was tested with a t-test on the means of each measure on initial assessment, one-month assessment, and six-month assessment. The t-test measured six relationships.

CHAPTER IV

RESULTS

Sample

Males are underrepresented in the sample (7 males, 28 females). However, the effect of gender on the results is measured to determine whether or not gender should be a co-variable in the analysis. Of the three measures, Global Distress on the Symptom Checklist 90-Revised (SCL-90R), Differentiation on the Differentiation of Self Inventory (DSI), and Total Schemas endorsed on the Young Schema Questionnaire (YSQ), only global distress is significantly different at an alpha level of .01 between men and women participants ($t=2.82, p < .01$). A closer look reveals that female participants are more likely to endorse Anxious ($t=4.57, p < .001$), Obsessive Compulsive ($t=1.70, p < .01$), and Somatic ($t=2.61, p < .01$) symptoms at an alpha level of .01. The researcher analyzed the subscales of the YSQ at an alpha level of .01 to determine gender differences and found that females are more likely to endorse Unrelenting Standards ($t=3.39, p < .01$) and Insufficient Control ($t=1.71, p < .05$) schemas. No significant gender differences are identified among DSI subscales. Because of the limited number of male participants and the gender effects, gender is not used as a co-variable.

Of the 35 participants, 27 (77.1%) identified themselves as white, 5 (14.3 %) identified themselves as black and 3 (8.6%) identified themselves as Hispanic. Participants' ages ranged from 24 to 60 with a mean age of 40.1 years. All participants

lived in the United States and resided in New York, New Jersey, Florida, Tennessee, Oklahoma, New Mexico, Washington State, or Texas.

Hypotheses

Four hypotheses are examined for this study. The first hypothesis states that the total number of schemas endorsed on the YSQ and that Global Distress Scale scores on the SCL-90R would be greater than population norms. This hypothesis is tested using an independent samples t-test. Table 3 shows Global Distress Scale Scores are significantly higher among participants on the first ($t = 17.29, p < .001$), second at one month post treatment ($t = 17.74, p < .001$), and third ($t = 15.88, p < .001$) administrations at six months post treatment when compared to non-patients. Table 4 shows that participants' Global Distress Scale Scores, when compared to psychiatric inpatients, are significantly higher on assessment one ($t = 6.85, p < .001$), and two ($t = 7.09, p < .001$), but not on three ($t = 1.99, p < .06$).

The second hypothesis, Global Differentiation scores on the DSI would correlate with the number of maladaptive schemas indicated on the YSQ and psychological symptoms indicated on the SCL-90-R, is tested with multiple regression and stepwise regression analyses. A model of SCL-90R Global Distress Scores and Total Schemas endorsed on YSQ significantly predict Differentiation Scores on the DSI ($F = 5.37, p < .01$), as shown in Table 5. To better understand the relationship between differentiation, schemas, and psychological distress, the DSI subscales are entered using the stepwise method to determine which aspects of differentiation significantly predict variance in total schemas and global distress among participants. The results are shown in Table 6.

Table 3. Summary of One Sample t-test of Participant's Global Distress Scale Scores on the Symptom Checklist-90 Revised at Time One, Two, and Three Compared to Non-patient Norms.

Test value = .31				
				Mean difference of participant's
	Df	<i>t</i>	<i>p</i>	scores from test value
Global Distress Score 1	34	17.29	.001**	1.64
Global Distress Score 2	34	15.76	.001**	1.38
Global Distress Score 3	34	15.88	.001**	1.13

Note: ** $p < .01$

Table 4. Summary of One Sample t-test of Participant's Global Distress Scale Scores on the Symptom Checklist-90 Revised at Time One, Two, and Three Compared to Psychiatric Inpatient Norms.

Test value = 1.30				
				Mean difference of participant
	Df	<i>t</i>	<i>p</i>	scores from test value
Global Distress Score 1	34	6.85	.001**	.65
Global Distress Score 2	34	4.47	.001**	.39
Global Distress Score 3	34	1.99	.06	.14

Note: ** $p < .01$

Table 5. Summary of Multiple Regression Analysis for Variables Predicting Differentiation Scores on the Differentiation of Self Inventory on Initial Assessment (N=35).

	Sum of		Mean		
Model	Squares	df	Square	<i>F</i>	<i>p</i>
Regression	3654.31	2	1827.16	5.37	.01**
Residual	10898.66	32	340.58		
Total	14552.97	34			

Note: Predictors: (Constant) Global Distress Scores on SCL-90R and Total Schemas on YSQ

***p* < .01

Table 6. Summary of Stepwise Multiple Regression Analysis for Variables Predicting Symptom Checklist–90 Revised Scores on Initial Assessment (N=35)

	Unstandardized		Standardized		
Model	Coefficients		coefficients	<i>t</i>	<i>p</i>
	B	Std. Error	Beta		
1. Constant	278.89	31.53		8.84	.001
I-Position	-3.44	1.02	-.506	3.37	.002**

Note: Excluded variables: Emotional Reactivity (*t*= .408, *p*= .69) Emotional Cutoff (*t*= 1.501, *p*=.14) and Fusion with Others (*t*= 2.03, *p*= .051)

***p* < .01

Table 7. Summary of Stepwise Multiple Regression Analysis for Variables Predicting Young Schema Questionnaire Scores on Initial Assessment (N=35).

Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	Coefficients		coefficients		
	B	Std. Error	Beta		
1. Constant	15.03	1.685		5.57	.001**
I-Position	-.34	.087	-.56	3.92	.001**

Note: Excluded variables: Emotional Reactivity ($t = .452$, $p = .66$) Emotional Cutoff ($t = .753$, $p = .45$) and Fusion with Others ($t = 1.84$, $p = .08$)

** $p < .01$

When predicting global distress on the first administration, the I-Position subscale score is the only variable entered ($t = 3.37$, $p < .002$). When predicting total schemas endorsed on the YSQ, the I-Position subscale score is the only variable entered ($t = 3.92$, $p < .001$), as shown in Table 7. In both cases, once the variance associated with the I-Position subscale is partialled out, none of the remaining three subscales is significant.

The second hypothesis also states that the relationship between DSI and Global Distress Scores on the SCL-90R and Total Schemas on YSQ would continue across all three assessments. The model of Global Distress Scores on the SCL-90R and Total Schemas on YSQ significantly predict Differentiation Scores on the DSI after one month ($F = 3.73$, $p < .02$), and after 6 months ($F = 28.22$, $p < .001$) and is shown in Tables 8 and 9. Table 10 shows the stepwise regression, in which Fusion with Others subscale scores ($t = 2.93$, $p < .01$) and Emotional Cutoff subscale scores ($t = 2.32$, $p = .07$) are added to the model that previously included only the I-Position subscale ($t = 2.7$, $p < .01$). However, the

Fusion with Others subscale decreases on the second at one month post treatment administration, which is statistically significant in the opposite direction than predicted by the hypothesis. When using the stepwise regression analysis to identify which subscales of the DSI are most salient in predicting global distress scores after six months, Fusion with Others ($t=2.03, p< .05$) and I-Position subscale ($t=-3.13, p< .004$) remain in the model, but Emotional Cutoff ($t=1.50, p= .14$) drops out (Table 11). When predicting total schemas endorsed on the YSQ, the stepwise regression procedure enters only the I-Position subscale score after one month ($t= -2.37 p < .01$) and six months ($t=-5.82, p < .001$), as shown in Tables 12 and 13.

Hypothesis three states that families' environments would be more chaotic after one month and less chaotic after six months. Using a paired samples t-score test, the researcher compared the means of assessment one and assessment two and found that the Expressive subscale scores ($t=1.97, p < .04$), and Organization subscale Scores ($t=5.73, p < .001$) are statistically significantly less on the second administration at one month post treatment, as predicted by the hypothesis. Control subscale scores ($t=3.97, p < .001$) decrease instead of increase between the first administration and the second administration at one month post treatment, which is in the opposite direction of the hypothesis. Cohesion subscale scores ($t= .13, p= .45$), Conflict subscale Scores ($t=.89, p= .19$), and Independence subscale scores ($t=1.09, p= .14$) were non-significant. When comparing means of administration two at one month post treatment and administration three at six months post treatment using a paired samples t-score, the relationship

Table 8. Summary of Multiple Regression Analysis for Variables Predicting Global Differentiation Scores on the Differentiation of Self Inventory after One Month (N=35).

	Sum of		Mean		
Model	Squares	Df	Square	<i>F</i>	<i>p</i>
Regression	6110.48	2	3055.24	3.73	.02*
Residual	26147.92	32	817.12		
Total	32258.40	34			

Note: Predictors: (Constant) Global Distress Scores on Symptom Checklist–90 Revised and Total Schemas on Young Schema Questionnaire on second administration at one month post treatment.

* $p < .05$

Table 9. Summary of Multiple Regression Analysis for Variables Predicting Global Differentiation Scores on the Differentiation of Self Inventory on third administration at Six months following treatment (N=35)

	Sum of		Mean		
Model	Squares	df	Square	<i>F</i>	<i>p</i>
Regression	22605.19	2	11302.60	28.22	.001***
Residual	12818.41	32	400.58		
Total	35423.60	34			

Note: Predictors: (Constant) Global Distress Scores on Symptom Checklist–90 Revised and Total Schemas on Young Schema Questionnaire

*** $p < .01$

Table 10. Summary of Stepwise Multiple Regression Analysis for Variables Predicting Symptom Checklist-90 Revised Scores after One Month (N=35)

Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	coefficients		coefficients		
	B	Std. Error	Beta		
1. Constant	259.60	25.56		10.16	.001**
I-Position	-2.33	.69	-.51	3.40	.002**
2. Constant	214.07	30.67		6.98	.001**
I-Position	-2.80	.67	-.61	4.17	.001**
Fusion with Others	1.91	.80	.35	2.38	.02*
3. Constant	249.61	32.60		7.66	.001**
I-Position	-2.00	.73	-.43	2.70	.01**
Fusion with Others	2.25	.77	.41	2.93	.01**
Emotional Cutoff	-1.98	.85	-.37	2.32	.03*

Note: Excluded variables: Emotional Reactivity ($t = .39$, $p = .70$)

* $p < .05$, ** $p < .01$

Table 11. Summary of Stepwise Multiple Regression Analysis for Variables Predicting Symptom Checklist-90 Revised Scores after Six Months (N=35)

Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	coefficients		coefficients		
	B	Std. Error	Beta		
1. Constant	196.98	22.20		8.87	.001***
I-Position	-1.76	.56	-.478	3.13	.004**

Note: Excluded variables: Emotional Reactivity ($t = .408$, $p = .69$) Emotional Cutoff ($t = 1.501$, $p = .14$) and Fusion with Others ($t = 2.03$, $p = .051$)

** $p < .01$, *** $p < .001$

Table 12. Summary of Stepwise Multiple Regression Analysis for Variables Predicting Young Schema Questionnaire Scores after one month (N=35)

Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	coefficients		coefficients		
	B	Std. Error	Beta		
1. Constant	8.26	1.93		4.29	.001***
I-Position	-.12	.05	-.38	2.37	.01**

Note: Excluded variables: Emotional Reactivity ($t = .34$, $p = .37$) Emotional Cutoff ($t = .12$, $p = .45$) and Fusion with Others ($t = .39$, $p = .35$)

** $p < .01$ *** $p < .001$

Table 13. Summary of Stepwise Multiple Regression Analysis for Variables Predicting Young Schema Questionnaire Scores after six months (N=35)

Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	coefficients		coefficients		
	B	Std. Error	Beta		
1. Constant	13.59	1.75		7.75	.001***
I-Position	-.26	.04	-.71	5.82	.001***

Note: Excluded variables: Emotional Reactivity ($t = .148$, $p = .15$) Emotional Cutoff ($t = 1.76$, $p = .08$) and Fusion with Others ($t = .37$, $p = .71$)

** $p < .01$ *** $p < .001$

between the Cohesion scores ($t=1.97, p< .03$) Expressive scores ($t=-3.68, p< .001$), Independence subscale Scores ($t=-3.72, p< .001$), and Organization subscale scores ($t=-4.56, p < .001$) increase between the second at one month post treatment and third administration at six months following treatment and are significant in the direction of the hypothesis. Control subscale scores ($t=1.79, p < .04$) significantly decrease between assessment two and assessment three, which is in the opposite direction of the hypothesis. Conflict subscale scores are not significant ($t= .68 p=.25$). The subscale means are reported in Table 14 and paired sample t-score results are reported in Table 15 and 16.

A one-way ANOVA using contrasts is run on the data to determine whether or not the data followed the curvilinear pattern predicted by the hypothesis. The Family Environment Scale subscales of Cohesion ($t = .208, p = .42$), Expressiveness ($t = 1.20, p = .12$), Conflict ($t = .07, p = .48$), Independence ($t = 1.48, p = .07$), and Control ($t = .91, p = .18$) do not significantly follow the trend of decreased means on the second administration at one month post treatment followed by increased means on the third assessment at six months following treatment, as predicted by the hypotheses. The Organization subscale follows the trend predicted by the hypothesis ($t = 2.33, p < .01$).

Hypothesis four states that participants would experience a decrease in total schemas and global distress between the first administration and the second at one month post treatment and between the first administration and the third administration at six months following treatment. Hypothesis four also predicts an increase in differentiation scores between administration one and one month following treatment and between

Table 14. Descriptive Statistics for Family Environment Scale Scores for time One, Two, and Three (N=35).

	N	Min.	Max.	Mean	St. Deviation
Cohesion1	35	1	9	3.43	2.69
Cohesion2	35	1	8	3.40	2.10
Cohesion3	35	1	8	3.57	2.12
Expressiveness1	35	1	7	3.37	1.68
Expressiveness2	35	1	7	3.06	1.57
Expressiveness3	35	1	7	3.54	1.56
Conflict1	35	1	9	4.11	2.39
Conflict2	35	1	9	3.91	1.77
Conflict3	35	1	9	3.77	2.16
Independence1	35	0	7	3.66	1.75
Independence2	35	1	6	3.51	1.48
Independence3	35	1	7	4.34	1.51
Control1	35	3	9	5.86	2.26
Control2	35	2	9	5.17	1.92
Control3	35	2	9	5.26	1.98
Organization1	35	1	8	4.94	2.13
Organization2	35	1	7	3.86	1.72
Organization3	35	1	7	4.57	1.72

Table 15. Summary of Paired Samples t-Test among Family Environment Scale Subscale Scores for Assessment One and Two.

	Paired Differences			99% Confidence				
	Mean	Std.	Std.err.	interval of the				
				difference				
	difference	dev.	mean	Lower	Upper	<i>t</i>	df	<i>p</i>
Coh1-Coh2	.02	1.34	.23	-.43	.49	.13	34	.45
Exp1-Exp2	.31	1.05	.18	-.04	.68	1.97	34	.04*
Conf1-Conf2	.20	1.32	.22	-.25	.65	.89	34	.19
Ind1-Ind2	.14	.77	.13	-.12	.41	1.09	34	.14
Org1-Org2	1.09	1.12	.19	.70	1.47	5.73	34	.001***
Cont1-Cont2	.69	1.02	.17	.33	1.04	3.97	34	.001***

Note: Coh1=FES Cohesion subscale, Assessment 1; Coh2= FES Cohesion subscale, Assessment 2; Exp1= FES Expressiveness subscale, Assessment 1; Exp2= FES Expressiveness subscale, Assessment 2; Conf1= FES Conflict subscale, Assessment 1; Conf2= FES Conflict subscale, Assessment 2; Ind1= FES Independence subscale, Assessment 1; Ind2= FES Independence subscale, Assessment 2; Org1= FES Organization subscale, Assessment 1; Org2= FES Organization subscale, Assessment 2. Cont1= FES Control subscale, Assessment 1; Cont2= FES Control subscale, Assessment 2: * $p < .05$ *** $p < .001$

Table 16. Summary of Paired Samples *t*-Test among Family Environment Scale Subscale Scores for Assessment Two and Three.

Paired Differences								
99% Confidence								
interval of the								
difference								
	Mean	Std.	Std.err.					
	difference	dev.	mean	Lower	Upper	<i>t</i>	df	<i>p</i>
Coh2-Coh3	-.17	.51	.09	-.35	.50	1.97	34	.03*
Exp2-Exp3	-.49	.78	.13	-.75	-.22	3.68	34	.001***
Conf2-Conf3	.14	1.24	.21	-.28	.57	.68	34	.25
Ind2-Ind3	-.83	1.32	.22	-1.28	-.38	3.72	34	.001***
Org2-Org3	-.71	.93	.16	-1.03	-.40	4.56	34	.001***
Cont2-Cont3	-.85	.28	.48	-.18	1.19	1.79	34	.04*

Note: Coh2=FES Cohesion subscale, Assessment 2; Coh3= FES Cohesion subscale, Assessment 3; Exp2= FES Expressiveness subscale, Assessment 2; Exp3= FES Expressiveness subscale, Assessment 3; Conf1= FES Conflict subscale, Assessment 2; Conf3= FES Conflict subscale, Assessment 3; Ind2= FES Independence subscale, Assessment 2; Ind3= FES Independence subscale, Assessment 3; Org2= FES Organization subscale, Assessment 2; Org3= FES Organization subscale, Assessment 3. Cont2= FES Control subscale, Assessment 2; Cont3= FES Control subscale, Assessment 3; **p*< .05 ***p*< .01 ****p*<.001

administration one and six months following treatment. The hypothesis is supported by paired t-scores that reveal a statistically significant decrease in total schemas between the initial administration and the administration one month following treatment ($t=3.01$ $p < .004$) and the initial administration one and the administration six months following treatment ($t=3.13$ $p < .004$). Global Distress Scores are statistically significantly less one month following treatment ($t=-6.07$, $p < .001$) and six months following treatment ($t=7.51$, $p < .001$) than on the initial administration. Differentiation Scores are statistically significantly higher on the administration one month post treatment ($t=-6.31$, $p < .001$) and on the administration six months following treatment ($t=-8.31$, $p < .001$) than on the initial administration. The descriptive statistics are reported in Table 17 and the results of the paired sample T-test are reported in Table 18.

Table 17. Descriptive Statistics for Symptom Checklist–90 Revised (SCL 90-R), Differentiation of Self Inventory (DSI), and Young Schema Questionnaire (YSQ), for Times One, Two, and Three (N=35)

	N	Min.	Max.	Mean	Std. Dev.
SCL 90-R Global Distress:					
1 st Administration	35	75	299	175.46	50.48
1 Month Post Treatment	35	72	251	152.26	46.68
6 Months Post Treatment	35	64	208	129.77	37.97
DSI Differentiation Scores					
1 st Administration	35	71	156	111.17	20.69
1 Month Post Treatment	35	76	206	135.40	30.8
6 Months Post Treatment	35	70	185	145.80	32.28
YSQ Total Schemas					
1 st Administration	35	0	14	4.69	4.52
1 Month Post Treatment	35	0	12	3.89	3.47
6 Months Post Treatment	35	0	14	3.74	3.74

Table 18. Summary of Paired t-Test Results for Global Distress Scale on the Symptom Checklist-90 Revised, Total Schemas on the Young Schema Questionnaire, and Differentiation Scores on the Differentiation of Self Inventory.

	Paired Differences			95% Confidence				
	Mean	Std.	Std. err.	interval of the				
				difference				
	difference	dev.	mean	Lower	Upper	<i>t</i>	df	<i>p</i>
Glob1-Glob2	-23.20	22.62	3.82	-30.97	.15.43	6.07	34	.01**
Dif1-Dif2	-24.23	22.72	3.84	-32.04	-16.42	6.31	34	.01**
Tsch1-Tsch2	.80	1.55	.26	.27	1.33	3.01	34	.004**
Glob1-Glob3	45.68	35.98	6.08	33.33	58.05	7.51	34	.01**
Dif1-Dif3	-34.63	24.66	4.17	-43.10	-26.16	8.31	34	.01**
Tsch1-Tsch3	.94	1.78	.30	.33	1.55	3.13	34	.004**

Note: Glob1= Global Distress on Assessment 1; Glob2= Global Distress on Assessment 2; Glob 3= Global Distress on Assessment 3; Dif1= Differentiation of Self on Assessment 1; Dif2= Differentiation of Self on Assessment 2; Dif3= Differentiation of Self on Assessment 3; Tsch1= Total Schemas Endorsed on Assessment 1; Tsch2= Total Schemas Endorsed on Assessment 2; Tsch3= Total Schemas Endorsed on Assessment 3
 p*< .05 *p*< .01

CHAPTER V

DISCUSSION

Discussion of Results

The first hypothesis states that trauma victims and family members would have more maladaptive schemas and more psychological symptoms than the normal population as measured by the Young Schema Questionnaire (YSQ; Young, 1999) and Symptom Checklist-90 Revised (SCL-90R; Derogatis, 1994). A statistical comparison to the YSQ non-patient norm group is not possible because the norms were not complete. However, Young (1999) believes that every schema endorsed on the YSQ negatively affects psychological functioning. On average, participants endorsed 4.69 maladaptive schemas, suggesting that psychosocial trauma patients hold multiple beliefs that impede their mental health.

As for participants' Global Distress scores on the SCL-90R, their mean scores are significantly higher than SCL-90R non-patient norms and SCL-90R inpatient norms. The participants' inpatient status logically assumed that their Global Distress scores would be higher than those not requiring hospitalization, but scoring significantly higher than the inpatient norms requires an explanation. These results are similar to Klotz-Flitter, Elhai, and Gold's (2003) research, which shows that adult victims of childhood sexual abuse elevate the F-scale on the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The F-scale, commonly used

to determine validity, elevates when participants endorse critical items on multiple subscales, indicating severe distress. Ross's (2000) theory on trauma and comorbidity explains the difference between trauma patients and more typical inpatients. Ross believes that trauma victims' psychopathologies include symptoms from multiple diagnostic criteria, which often lead mental health professionals to diagnose these patients with multiple and changing diagnoses. This comorbidity may elevate the Global Distress Scale.

The total number of maladaptive schemas that participants held and their global distress decreased between the first administration and second administration one month post treatment and between the second administration and the third, six months post treatment. The progressive decrease of participants' maladaptive schemas and global distress may be explained by Kolts, Robinson, and Tracy's (2004) research, which indicated that negative posttraumatic thoughts predicted Post Traumatic Stress Disorder symptom levels, Welburn, Coristine, Dagg, Pontefract, and Jordan (2002), whose research showed that the YSQ predicted symptom levels and Livanou et al.'s (2002) research, which determined that baseline schemas of mistrust, helplessness, meaninglessness, and unjustness of the world, correlated with PTSD symptoms.

Participants' Global Distress Scale Scores no longer differ significantly from SCL-90R inpatient norms on the final administration, as participants' distress continued to decrease following their release from the hospital. However, after six months, this study's participants had not improved to the level of the non-patient norm group, as evidenced by the significantly higher global distress score means of the participants when

compared to non-patient norms on all three administrations. The significant difference of this study's participants from the general population suggests the chronic nature of their psychopathology and may explain why all but two participants were hospitalized previously.

Total Schemas on the YSQ and Global Distress Scores on the SCL-90R significantly predict differentiation scores on the Differentiation of Self Inventory (DSI; Skowron & Friedlander, 1998). This finding suggests that trauma victims who hold more maladaptive schemas and experience more psychological distress are less differentiated than trauma victims who hold fewer maladaptive schemas and experience less psychological distress. These results counter Green et al.'s (1986) statement that differentiation levels do not discriminate by severity of diagnosis, but support Tuason and Friedlander's (2000) findings that differentiation levels predict psychological distress on the Symptom Checklist-90 and Skowron, Holmes, and Sabatelli's (2003) findings that the DSI predicts the degree of psychological well-being in the general population.

The researcher further investigated the relationships among schemas, global distress, and differentiation of self by comparing the subscales of the DSI with participant scores on the Global Distress Scale of the SCL-90R and Total Schemas endorsed on the Young Schema Questionnaire. By using a stepwise regression, the I-Position subscale of the DSI is the only variable required to predict variance in global distress, leaving Emotional Cutoff, Fusion with Others, and Emotional Reactivity out of the model. On the second administration at one month post treatment, Fusion with Others and Emotional Cutoff are added to the model because they predict additional variance not accounted for

by I-Position. The addition of these subscales on the second administration at one month post treatment suggests that interpersonal relationship variables become more salient when participants return home from the hospital. Of the two interpersonal variables, the Emotional Cutoff subscale means increase, which means that participants are less likely to cut-off emotionally from family members. The increase in Emotional Cutoff subscale means is in the direction of the hypothesis. The Fusion with Others subscale means decreased, meaning that participants are more likely to fuse with family members. The decrease of Fusion with Others means is in the opposite direction predicted by the hypothesis.

This finding on differentiation of self may be understood through Bowen's theory, which states that people fuse with each other by "borrowing" and "trading" of selves as a means to adapt to anxiety (Kerr & Bowen, 1988, p. 98). Figley (1998) identifies a pattern in which family members fuse with trauma victims soon after learning of their victimization. Fusion of family members with victims includes increased vigilance toward the trauma victims mood states and exaggerated caretaking. This condition recedes and is followed by compassion fatigue and increased disconnection from the trauma victims. Figley researched families where the trauma was recent, which is not the case for many of the participants in this study. Therefore, mapping his theory onto this researcher's findings assumes that family members will respond in a similar manner to members returning from a psychiatric hospital as to recently traumatized members. Disconnection, the second stage of Figley's compassion fatigue theory, is a period in which family members begin to pull away from the traumatized family member. By

pulling away, family members' fusion with the traumatized member is less likely, which decreases the availability of fused relationships to decrease anxiety. Therefore, the participants either improved or identified another method to defend against anxiety. This theory may explain why the Fusion with Others subscale became less salient, although still significant, in predicting Global Distress scores on the third administration at six months following treatment.

The Emotional Cutoff subscale's addition to the model on the second administration at one month post treatment reveals that some participants decreased their emotional distance from family members when returning from the hospital. When this result is interpreted through Bowen theory (Kerr & Bowen, 1988), it means that although some of the participants managed their anxiety through fusions, others emotionally distanced themselves. For those participants who managed anxiety through distance, treatment may have decreased their anxiety, thus reducing the need to employ this tactic. Since decreased Emotional Cutoff allowed for additional emotional support, this support is likely to result in decreased symptoms (Higgins & McCabe, 2000). By the third administration at six months following treatment, the Emotional subscale score unexpectedly drops out of the model. Although the researcher suspects that increased ability of participants to know themselves and resist pressure from others to act counter to their beliefs and values (as measured by the I-Position subscale) decreases the influence of external variables, more research is needed to determine why the Emotional Cutoff scale no longer explains significant variance in Global Distress Scores after six months.

In the stepwise regression model using DSI subscales to predict Total Schemas endorsed on the YSQ, the I-Position subscale was the only one entered. High scores on the I-Position subscale indicate a clearly defined sense of self and an ability to thoughtfully adhere to personal convictions when experiencing pressure to do otherwise. The finding suggests that the better trauma victims know themselves and are able to resist others' attempts to influence their personal convictions, the less likely they are to hold maladaptive schemas. Although this connection makes sense intuitively, a search of the family systems literature shows that no other studies have made this connection. It is possible that people with higher I-Position scores are less willing to change their pre-trauma beliefs or are able to look at their beliefs more rationally. Because higher I-Position signals beliefs that were thoughtfully considered, they may be less likely to adhere to the rigidity often associated with maladaptive schemas. These two possible explanations cannot be verified by this study and require additional research.

The third hypothesis predicts that family environments would be more chaotic after one month and less chaotic after six months in a pattern supported by Chaos theory's application to human systems (Butz, Chamberlain, & McCown, 1997). Subscale group means vary in accordance with the hypothesis on Cohesion, Expressive, Independence, and Organization subscales, but not on Conflict and Control subscales. However, when testing subscale means for significant differences between administrations one and two, only the Expressive and Organization subscale scores decrease significantly, as predicted by the hypothesis and the Control subscale significantly decreases which was counter to the prediction of the hypothesis. These

findings mean that participant's family environments are less expressive, organized, and controlled one month after the trauma victims returned home from the hospital.

After six months, the third hypothesis predicted less chaotic family environments for participants, as indicated by increased cohesion, expressiveness, independence, and organization, and decreased control, because families are expected to reorganize at a higher level of functioning. When comparing means of administrations two and three, the Cohesion, Expressive, Independence, and Organization subscale scores are significantly higher in the third administration at six months following treatment than on the second at one month post treatment, which is in the direction the hypothesis predicts. Again, the Control subscale scores are significantly greater, which was in the opposite direction predicted by the hypothesis. Differences among Conflict subscale scores are not statistically significant. Between the first and six months following treatment, participants' families are more likely to be cohesive, allow more expression and independence, and to be better organized. Counter to expectations, these families are also likely to exert more control. A possible explanation for these findings is that members renegotiated roles, with the formerly hospitalized family members changing from the family symptom bearers to more equal positions. This role switch may have allowed family members to express their feelings without worrying about the effect on the traumatized members. This increase in expressiveness may have increased the feelings of closeness, thus raising cohesion scores. Families may have reacted to the chaos in two apparently contradictory ways. Some families may let go of controls and allow for more independence, whereas others may increase controls to manage the changes. Thus, a

single pattern of predictable responses to levels of chaos following treatment does not clearly emerge.

When a more stringent statistical test was applied to determine whether or not participants' scores followed the curvilinear trend predicted by the third hypothesis, only the Organization subscale was significant. This finding suggests that the Organization subscale is the only Family Environment Scale (FES; Moos & Moos, 1994) subscale sampled in this study that significantly follows a pattern of decreased functioning within one month and increased functioning after six months. A possible explanation for these results is that chaos is more evident in families' daily tasks than in their interactions with each other, since organization is the only FES subscale used in this study that does not directly measure family interactions (Figley, 1989, 1998). The chaos in interpersonal interaction may be muted by family members' attempts to avoid disturbing their traumatized members. Because the study was only able to gather information from the traumatized members, their perceptions may be shielded.

The insignificance of the other subscales' trend analysis further suggests that a single pattern of predictable responses to levels of chaos following treatment does not clearly emerge in this study. The lack of a predictable response pattern suggests that either the theory does not apply to the areas of functioning measured by the FES or the study did not allow enough time to see the true pattern of change. The researcher suspects that the phenomenon does exist but individual differences cause each family to follow the pattern of change at a different rate. Had the researcher used a qualitative analysis across a greater period of time, the phenomenon may be more apparent.

Hypothesis four stated that participants' psychological symptoms and maladaptive schemas would decrease between the first administration and second administration at one month post treatment s and between the first and third administrations six months post treatment, and differentiation of self would increase between the first administration and second administration at one month post treatment and between the first administration and third administration at six months following treatment. In other words, this hypothesis predicts that participants' psychological functioning would improve after their release from the hospital and that they would maintain their gains after six months. The hypothesis is supported by the DSI, SCL-90R, and YSQ results, in which DSI scores increased, and SCL-90R Global Distress Scores and YSQ total Schemas Endorsed decreased, indicating improvements after one month that are maintained after six months. A closer look at the data reveals that 22 of the 35 participants improved by 10 or more points on the Global Distress scale between administration one and two and 27 of the 35 improved by 10 or more points between administration one and three.

The significant change in differentiation levels among participants appears to contradict research and theory about differentiation stability. Bohlander (1995) believes that individuals' maximum levels of differentiation are determined by the time they leave their families of origin, which is typically between the ages of 18 and 20. Williamson (1981) theorizes that the apex of differentiation comes in the fourth and fifth decade of life. The only empirical research on this subject was done by Lawson, Gaushell, and Karst (1993), who identify significant differences in differentiation between people in their 20s and 30s, but find no significant difference in differentiation between those in

their 30s and those who are 40 and older. In the present study, differentiation levels change in a relatively short period of time, which either contradicts the finding that differentiation levels are stable once a person reaches adulthood or that the DSI does not measure basic differentiation but functional differentiation, which fluctuates in response to anxiety (Kerr & Bowen, 1988). If the former is true, an adjustment to Bowen's theory on differentiation is needed. If the latter is true, researchers using the DSI may need to administer a second anxiety measure or take multiple measures over time to determine basic differentiation levels.

Participants' Written Responses

To better understand the participants' family dynamics, the researcher invited participants to write comments on changes, if any, their families had experienced in the recent past. These responses are exploratory in nature and are not tied to a specific hypothesis or research question. Although this task was optional, 17 participants responded. On the first administration, 12 of the 17 participants who wrote additional comments acknowledged that it was a major change in their families that precipitated their entry into the hospital. Some responses intimate that their families' acknowledgments of past trauma gave permission for them to seek help. One respondent states that when her abusive father entered therapy, she realized what had happened to her was real and warranted treatment. For another participant, the change was in the symptomatic behaviors of other family members. For example, one participant wrote that her daughter "has extreme behavioral outbursts" and "cries when she (the participant) needs to leave." The same participant stated that her daughter revealed to her therapist

that she fears her mother “will not be safe” and “will not be there to pick her up after school.”

On the second administration at one month post treatment, 11 participants wrote additional comments and their responses focused on two themes. Five participants comments may be categorized as identifying a sense of disorder in the family. One individual stated that “the house was a mess when I returned and I am waiting for someone else to clean it up,” another wrote “we used to be five minutes early but can’t seem to get nowhere on time now.” The second theme, a failure of their family to adjust to participants’ recovery, is identified by four participants. “My partner monitors what we watch on T.V. as if I was 2” and “... keeps looking at me like I am about to fall apart” are two statements that illustrate their families’ failures to adjust. After the third administration six months post treatment, nine participants wrote comments, of which five identified positive changes in their families, but two stated that their families had changed, then returned to old patterns. The mother, whose quotes about her daughter’s concern for her safety were mentioned earlier, reports that her daughter had been transferred from special education to a regular classroom. Three participants wrote that they had taken over more of the families’ responsibilities and two noted that a family member, who had previously been “lazy,” began to take over some new responsibilities. One participant summed up her family’s responses by writing, “when I first came home, everyone worked hard to make our home happy but now the fighting is as bad as ever.” Although not quantifiable, these comments hint at the processes families undergo while one or more of its members recover from traumatogenic symptoms.

Application to Research

The results include new ideas about family systems and trauma research and theory. Neither family systems nor trauma researchers have investigated the relationships among differentiation levels and schemas, including the aspects of differentiation most necessary to predict psychological distress. The results of this study encourage researchers to attend more closely to participants' abilities to know themselves and maintain their values and beliefs when pressured to do otherwise when studying trauma and differentiation and may influence approaches to increasing resilience among trauma victims.

It is curious that relationship variables become more salient in predicting recovery one month after release from the hospital but not after six months. Additional research is required to determine whether or not this finding is the result of chance or whether interpersonal variables influence patients' recovery rates following inpatient and partial hospital treatment.

The changing importance of interpersonal variables adds a different perspective on the family support and recovery research (e.g., Nash et al., 1993; Quarentelli, 1985), which has not focused on dynamic factors. Herman (1992) identifies five stages of recovery, (Healing Relationship, Safety, Remembrance and Mourning, Reconnection, and Commonality) three of which focus on interpersonal relationships. Assuming that recovery follows Herman's stages, the importance of interpersonal variables would change, depending on victims' stages of recovery. For example, interpersonal relationships are only indirectly important when clients are in Herman's Remembrance

and Mourning stage but central when clients enter the Reconnection stage. It is possible that the significance of the Fusion with Others Subscale reflects Herman's first two stages: A Healing Relationship and Safety. Both Herman's theory and this study's findings encourage researchers to consider trauma victims' stages of recovery when researching interpersonal variables.

Application to Practice

Since this study identifies a relationship between maladaptive schemas and psychological symptoms in trauma victims, therapy that helps victims adopt more adaptive schemas is likely to be effective (McCann et al., 1988). This study supports treatments that focus on schema change. These treatments include, but are not limited to, Cognitive Processing Therapy (CPT), which exposes patients to traumatic memories and trains them to challenge maladaptive schemas (Hall & Henderson 1996; Resick & Schnicke, 1992); Rational-Emotive Behavior Therapy, which focuses on the safety, trust, power/control, esteem, and intimacy schemas (Rieckert & Moeller, 2000); Imagery Rescripting (Smucker & Dancu, 1999; Smucker, Dancu, Foa, & Niederee, 1995; Smucker & Niederee, 1995), which replaces victimization imagery with mastery imagery during imaginal exposure; Falsetti and Resnick's (2000a) interventions, which uses emotional processing as the gateway to schema change; and Young's Schema Therapy (1999), which integrates cognitive, experiential, interpersonal, and behavioral techniques to change maladaptive schemas.

The results also inform mental health professionals that their clients' family environments are likely to change as they recover. Change in one family member, but not

in others, is a potential source of chaos (Figley, 1989), a phenomenon that encourages practitioners to include all family members in therapy. Although the written data are exploratory and limited, the information encourages practitioners to at least inquire into how family members' interactions may discourage trauma members' mental health. Bowen describes these interactions as symptom-focused togetherness (Kerr & Bowen, 1988). In families held together by one member's symptoms, a reduction of symptoms may result in family members feeling that they are losing connection. When this is the case, mental health professionals must help families identify other reasons to be close or pressures for the trauma victims to return to sickness may continue.

Another possible source of increased family chaos may derive from the victims' refusal to absorb their families' anxieties, as evidenced by lower DSI scores. When this happens, family members may be forced to focus on themselves and their own anxieties or identify other family members to take on anxiety. If family members were forced to deal person to person with their issues, an increase in conflict would be expected. There are several possible reasons why the FES conflict scores did not increase, including that the participants were unaware of the conflict, the failure of the FES to measure increases in conflict, the conflict did not exist, or the conflict started after the sixth month administration.

Sustained improvement in functional differentiation leads to improvement in basic differentiation (Griffin & Apostol, 1993). The progressive increase in differentiation levels following trauma therapy suggests to family therapists that one pathway to improving families' differentiation levels is to treat its traumatized members.

It remains unknown as to whether or not Bowenian coaching to raise differentiation levels will decrease traumatogenic symptoms.

Application to Theory

The relationship among psychological symptoms, differentiation levels, and schemas supports numerous general population studies mentioned previously (e.g., Garbarino, Gaa, Swank, McPherson, & Gratch, 1995; Greene et al., 1986; Skowron & Friedlander, 1998; Skowron, Holmes, & Sabatelli, 2003), which suggests that the relationship between differentiation levels and symptoms exists among trauma victims in similar ways as in other populations. This finding supports Bowen's (1988) belief that differentiation is a universal concept that applies across populations.

This research offers little insight into how families experience the period of disorganization followed by reorganization that chaos theorists suggest (Butz, Chamberlain, & McCown, 1997). Butz et al. wrote several case studies with a variety of situations and outcomes to highlight change patterns, but they did not identify common experiences of disorganization within families. The current study identifies the organization subscale, which reflects families' abilities to organize for the purpose of accomplishing daily tasks, as following the change patterns associated with chaos theory. Family controls and emotional expression are possible additional factors that may follow these patterns, but this possibility is not fully supported by this study. Additional research is required to understand why and in what ways trauma patients' recoveries influence their family dynamics and vice versa.

Limitations

The current study was limited in its findings because family members did not participate. Only two family members responded to the first administration and none followed through with the administration one month post treatment. This lack of participation may be explained, in part, by Golding, Wilsnack, and Cooper (2002), who evaluated the association of sexual assault history with later social networks. These researchers show that traumatized people in their study were less likely than the general population to be married, to report at least weekly contact with friends and relatives, and to receive emotional support from friends, family, and spouses. These findings indicate that family members are less available or less willing to participate in a joint activity, like this study. Other possible explanations include family members' desire to emotionally distance from their family members' trauma as a result of compassion fatigue, and the researcher's failure to identify a significant motivator for family members' participation.

Psychology researchers have basic concerns regarding the construct validity of self-report measures like those used in this study. Both theory and research indicate that self-report responses are products of psychological, sociological and linguistic, experiential and contextual variables, which may have little to do with the construct of interest (e.g., Harrison, McLaughlin, & Coalter, 1996; Lanyon & Goodstein, 1997). Because of influences in addition to item content, researchers have shown that it is never clear precisely what is being measured (Paulhaus, 1984).

The results may be difficult to generalize due to the characteristics of the sample. The participants may not represent a typical traumatized population. Because the Ross

Trauma Centers specialize in the treatment of Dissociative Identity Disorder (DID), this sample likely includes a greater proportion of DID sufferers than is typical among trauma victims. The sample includes more women than men (80% women) and white participants are overrepresented (77%). Additional difficulties with the sample include non-random selection of participants and differing amount of inpatient therapy that participants experienced before completing the initial assessments. The intensive inpatient treatment received by some of the participants may make them more self-aware, possibly compromising the validity of outcome research (Blount, Evans, Birch, & Warren, 2002).

The variability of treatment length also raises problems with the researcher's supporting theory. A portion of the study attempts to identify the effects of a novel experience (i.e., inpatient treatment) on families with the expectation that trauma recovery would lead to chaos followed by reorganization. However, the mean number of previous psychiatric hospitalizations was 5.5, with only two participants entering the hospital for the first time. Forty five percent of the participants had three or more hospitalizations in the past ten years. This finding means that for a significant proportion of participants, inpatient psychiatric treatment was not a novel experience and for the 22.9 percent with more than six hospitalizations, it was the norm.

In addition to limitations in participant demographics, the measures also have shortcomings. As mentioned earlier, it cannot be determined whether the DSI measures functional or basic differentiation levels. Kerr and Bowen (1988) suggest that the most effective technique for learning about people's true levels of differentiation is to assess

the average functioning of people over time and the functioning of those who are closely involved with them. The DSI does not purport to measure the functioning of others in the system and does not give an average range of functioning.

Some researchers criticize the FES as a research tool. Many of the criticisms relate to the intellectual functioning required to complete the assessment. The Likert scale may be too difficult, or lead to fatigue and inattention with those who are less cognitively sophisticated (Devillis, 1991). In the development of the test, cross validation was used on the same sample that was used for item selection. Cross validation should be performed on a sample independent of the sample used for item selection (Dashiff, 1994). In the FES standardization sample, 294 families had three or more members respond to the instrument (Moos & Moos, 1986). Roosa and Beals (1990) criticize this method by stating that multiple reporters from one family may bias the instrument due to lack of sample independence. Internal consistency of the FES is called into question on at least three studies referenced by Dashiff (1994). Munet-Vilaro and Egan (1990) find that the FES does not translate well to cross cultural samples, namely African Americans and Hispanics. Vostanis and Nicholls (1995) have problems with the construct validity and the predictive validity of the FES when comparing clinical and normal families, particularly a discrepancy between the amount of criticism experienced in the family and the conflict subscale of the FES. Smith, Rivers, and Stahl (1992) criticize the Cohesion subscale because researchers and clinicians correlated it with both positive and negative outcome variables and interpret it as family closeness and enmeshment.

Conclusions

In spite of the limitations of the sample and the measures, this study provides some insights into the experience of trauma victims during and following psychiatric treatment. Intrapersonally, it is clear that trauma victims' belief systems, self awareness, and ability to hold true to their values in spite of pressure to do otherwise predict psychological symptoms. Interpersonally, the results are vaguer. Participants' emotional closeness to their families, even too close in enmeshment, predicts a decrease in symptoms. The researcher find that measures of individual differences were abundant, clear, and well researched. The same is not true when identifying measures of groups, especially families. The difference between interpersonal and intrapersonal measures is evident in this study because the individual measures clearly identified the schemas and psychological symptoms, whereas the dynamics of family change has to be inferred by changes in the family environment. A shift in focus from the individuals to the systems is needed, as it is clear that families shift and change in response to their members' psychopathology. Both trauma and family researchers are faced with the exciting challenge of identifying and integrating family dynamics.

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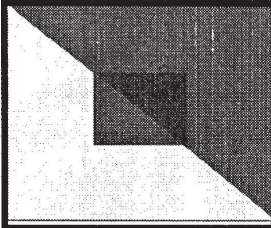
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Appendix A

Recruitment Flyers



Research Study

The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A Study of Trauma Survivors and Their Families

If you choose to participate

- ① Your responses will be respected by being kept confidential. Your therapist, family members, nor anyone but the principle researchers will see your responses.
- ② Your responses may help therapists gain insight into trauma victims and their families.
- ③ You will be asked to fill out several measures with a pencil or pen.
- ④ Your **current** family (those people age 13 and older who live in your home) will be mailed the same measures and asked to return them by mail.
- ⑤ You and your family will be asked to fill out the measures again in 1 month and six months.
- ⑥ You and your family will be entered into a drawing for \$100 each time you return a questionnaire packet. Odds of winning are 1 in 20 for each entry. You will also be sent the findings if you desire.

If you choose not to participate

- ① Your quality of care will **not** be affected.
- ② The researchers and staff will **not** think worse of you.
- ③ You will **not** be asked to explain why and your refusal will be respected.

Participation is voluntary

Principal Researcher

Dave Popple Ph. # 573-214-0874

Dissertation Co-Chairs

Linda Rubin Ph.D & Shelley Riggs Ph. D. Ph. # 940-898-2303

To participate please
notify a staff member



If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact Ms. Tracy Lindsay in the Office of Research & Grants Administration at 940-898-3377 or e-mail HSRC@TWU.EDU

Appendix B

Patient Scripts

Patient Script

Thank you for the opportunity to tell you about a research project. It is our hopes that the information gained will help therapists to better serve those who suffered trauma. If you choose to participate, we will respect your responses by keeping them confidential. Once the study is finished, any information that could identify the responses with you will be destroyed. It is also important for you to know that your decision to participate or not participate will not influence the quality of care you receive at the hospital or staff members' personal opinion of you. If you decline, you will not be asked to explain why and your refusal will be respected. Participation is voluntary.

This study investigates the relationship of trauma to you and your family. More specifically, this research investigates what you and your family members believe about themselves and the world, the type of relationships you have with each other, the perception of your family environment and the psychological symptoms you and other family members may be exhibiting. Because of the confidentiality of the study, we will not be able to share your responses with your family nor can we share their responses with you or each other.

This study includes several measures that can be filled out with a pencil or pen. Some of the questions may be troubling to you. In this case I encourage you to discuss the item with your therapist or a hospital staff member with whom you feel comfortable. When the measure is complete, please return to a therapy staff member who will deliver it to Dave Popple, the principal researcher. Dave has served as a student therapist for Dr. Ross for nine months and is committed to serving the trauma population with this research.

Your participation in this research also means that you will consent for Dave Popple to contact the other members of your family by mail. By family, we mean the people who currently live in your household. This study is not concerned with the family that you grew up with unless they still live in your household. Therefore, no one outside your current household will be contacted. Dave will contact another adult in your family by mail and explain the study. All family members over the age of 12 (13 and older) will be given the same measures that you filled out. They will not be allowed to see your responses and each will be encouraged to not to share their answers with each other. Questionnaires will be sent in a packet but each person age 13 and older will have their own self-addressed envelope to seal their responses in and mail them back. The procedure will be repeated after one month and six months. During the one-month and six-month follow-up, your questionnaire will be mailed to you with the rest of your family and your household will receive a reminder phone call. Each questionnaire has a postcard, fill out the card with your name, address, and phone number and place it in the envelope with the filled in questionnaire. This paper will be used for four purposes. The first is to send the packets to your family; the second is to contact for the follow-up phone call; the third is that it serves as your entrance into a drawing, and finally, the card is your opportunity to receive the results of the study (Show card). You will not be given your individual results. For each questionnaire returned, you or your family members have a one in 20 chance of winning \$100. Each person would have as many as three chances to win if they sent in their initial response, one-month follow-up and six-month follow-up. By consenting to participate in this study, you are agreeing to fill out the forms and return them within 72 hours and you are agreeing to allow the principal

researcher to send a research packet to your family and to make a reminder phone call to your home in one and six months.

Before filling out the questionnaire, please read and sign the consent form, feel free to ask me at any time if there is anything in the consent form or questionnaire that you do not understand.

Appendix C

Trauma Patients and Family Members Consent Forms

TEXAS WOMAN'S UNIVERSITY

SUBJECT CONSENT TO PARTICIPATE IN RESEARCH

Title: The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A Study of Trauma Patients and Their Families

Investigator: David Popple.....214-563-9435
Advisors Linda Rubin Ph.D. and Shelley Riggs Ph.D..... 940-898-2303

You are being asked to participate in a research study for Mr. Popple's doctoral dissertation at Texas Woman's University. The purpose of this research is to determine the effects of trauma on trauma survivors and their families. The study focuses on participants' abilities to make decisions based on thinking and not feeling, participants' beliefs about themselves and the world, relationships among family members, and participants' family environment. The researcher will pass out or mail questionnaires to people who have been hospitalized for trauma and their families. Participants will be asked to fill out the questionnaire within 3 days of receiving it and again in one month and six months for a total of three testing periods. As part of this study, you are also giving permission for the researcher to phone you prior to mailing the second and third assessment. For this study you will fill out questionnaires that ask you about your beliefs, your relationships with family members, your family environment and symptoms that you may be experiencing. You may fill the questionnaire out on your own time. It will take you between 30 and 45 minutes each time to complete the questionnaires. You will be asked to fill out the questionnaires three times in one year for a total of an hour and 30 minutes to 2 hours and 15 minutes total time.

The investigation involves the risk of release of confidential information. Confidentiality will be protected to the extent that is allowed by law. Each participant will be given a code and the master list with identifying information will be kept separate from the responses. At the end of the study, all identifying information will be shredded and deleted from computer files no later than October 31st, 2002. All of the data will be destroyed no later than December 31st, 2004. You should not write your name, or any other individual's name, on the questionnaires. The questionnaires will be stored in a locked filing cabinet and all computer files will be password protected. It is anticipated that the data will be published for doctoral dissertation, books, and/or journals. However, names or other identifying information will not be included in any publication.

The questions in this study may trigger uncomfortable memories or possible emotional discomfort as a result of the questions being asked while you are in the hospital. You may discontinue participation in the study with no repercussions. You are also encouraged to discuss those triggers with your individual therapist. When you receive a follow-up packet in the mail, you may experience similar discomfort because the questions will be the same. Again you may discontinue filling out the questionnaire. You are encouraged to discuss these memories with your therapist. If you no longer have a relationship with a therapist at that time, the hospital will recommend one for you. Any costs incurred as a result of participation in this study will be your responsibility.

The only direct benefits of this study to you is that at the completion of the study, a summary of the results will be mailed to you if you mark the box on the address card that indicates you desire them. Second, by returning the card you will be entered into a drawing for \$100. A card will accompany each set of measures. Every card you return is an entry. If you discontinue answering the questions, you may still get the results and enter the drawing by sending in the post card.

Initial here after
reading first page _____

If you have any questions about the research study you should ask the researchers: their phone numbers are at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact Ms. Tracy Lindsay in the Office of Research & Grants Administration at 940-898-3377 or e-mail HSRC@TWU.EDU.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Participation in this study is completely voluntary and you may withdraw at any time without penalty. If you have any questions, please contact the investigators at the above phone number. You will be given a copy of this dated and signed consent form to keep.

Signature of Participant

Date

The above consent form was read, discussed, and signed in my presence. In my opinion, the person signing said consent form did so freely and with full knowledge of its contents.

Signature of Investigator

Date

TEXAS WOMAN'S UNIVERSITY
SUBJECT CONSENT TO PARTICIPATE IN RESEARCH
ADULT FAMILY MEMBER

Title: The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A study of Trauma Patients and Their Families

Investigator: David Popple.....214-563-9435
Advisors Linda Rubin Ph.D. and Shelley Riggs Ph.D..... 940-898-2303

You are being asked to participate in a research study for Mr. Popple's doctoral dissertation at Texas Woman's University. Permission to contact you was granted by the member of your family who has recently been hospitalized. The purpose of this research is to determine the effects of trauma on trauma survivors and their families. The study focuses on participants' abilities to make decisions based on thinking and not feeling, participants' beliefs about themselves and the world, relationships among family members, and participants' family environment. The researcher will pass out or mail questionnaires to people who have been hospitalized for trauma and their families. Participants will be asked to fill out the questionnaire within 3 days of receiving it and again in one month and six months for a total of three testing periods. As part of this study, you are also giving permission for the researcher to phone you prior to mailing the second and third assessment. For this study you will fill out questionnaires that ask you about your beliefs, your relationships with family members, your family environment and symptoms that you may be experiencing. You may fill the questionnaire out on your own time. It will take you between 30 and 45 minutes each time to complete the questionnaires. You will be asked to fill out the questionnaires three times in one year for a total of an hour and 30 minutes to 2 hours and 15 minutes total time.

The investigation involves the risks of release of confidential information. Confidentiality will be protected to the extent that is allowed by law. Each participant will be given a code and the master list with identifying information will be kept separate from the responses. At the end of the study, all identifying information will be shredded and deleted from computer files no later than October 31st, 2002. All of the data will be destroyed no later than December 31st, 2004. You should not write your name, or any other individual's name, on the questionnaires. The questionnaires will be stored in a locked filing cabinet and all computer files will be password protected. It is anticipated that the data will be published for doctoral dissertation, books, and/or journals. However, names or other identifying information will not be included in any publication.

The questions in this study may trigger uncomfortable memories or cause emotional discomfort. You may discontinue participation in the study with no repercussions. You are encouraged to discuss those triggers with your individual therapist. If you do not have an individual therapist, the hospital where the traumatized member of your family received treatment can recommend one for you. The same risk is true for each of the packets you will receive in 6 months and one year because the questions are the same. Any costs incurred as a result of participation in this study will be your responsibility.

The only direct benefits of this study to you is that at the completion of the study, a summary of the results will be mailed to you if you mark the box on the address card that indicates you desire them. Second, by returning the card you will be entered into a drawing for \$100. A card will accompany each set of measures. Every card you return is an entry. If you discontinue answering the questions, you may still get the results and enter the drawing by sending in the post card.

If you have any questions about the research study you should ask the researchers: their phone numbers are at the top of this form. If you have questions about your rights as a participant in this research or the way

this study has been conducted, you may contact Ms. Tracy Lindsay in the Office of Research & Grants Administration at 940-898-3377 or e-mail HSRC@TWU.EDU.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Participation in this study is completely voluntary and you may withdraw at any time without penalty. If you have any questions, please contact the investigators at the above phone number. A copy of this dated and signed consent form will be mailed back to you following its receipt by the primary researcher.

Signature of Participant

Date

Signature of Investigator

Date

TEXAS WOMAN'S UNIVERSITY
SUBJECT CONSENT TO PARTICIPATE IN RESEARCH
CHILD FAMILY MEMBER

Title: The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A study of Trauma Patients and Their Families

Investigator: David Popple.....845-898-1810
Advisors Linda Rubin Ph.D. and Shelley Riggs Ph.D..... 940-898-2303

Your Child is being asked to participate in a research study for Mr. Popple's doctoral dissertation at Texas Woman's University. Permission to contact you was granted by the member of your family who has recently been hospitalized. The purpose of this research is to determine the effects of trauma on trauma survivors and their families. The study focuses on participants' abilities to make decisions based on thinking and not feeling, participants' beliefs about themselves and the world, relationships among family members, and participants' family environment. The researcher will pass out or mail questionnaires to people who have been hospitalized for trauma and their families. Participants will be asked to fill out the questionnaire within 3 days of receiving it and again in one month and six months for a total of three testing periods. Minors will not receive a reminder phone call. For this study you will fill out questionnaires that ask your child about his or her beliefs, your child's relationships with family members, your child's family environment and symptoms that she or he may be experiencing. Your child may fill the questionnaire out on his or her own time. It will take your child between 30 and 45 minutes each time to complete the questionnaires. Your child will be asked to fill out the questionnaires three times in one year for a total of an hour and 30 minutes to 2 hours and 15 minutes total time.

The investigation involves the risks of release of confidential information, improper release of data, and loss of privacy. Confidentiality will be protected to the extent that is allowed by law. Each participant will be given a code and the master list with identifying information will be kept separate from the responses. At the end of the study, all identifying information will be shredded and deleted from computer files no later than October 31st, 2002. All of the data will be destroyed no later than December 31st, 2004. Your child should not write his or her name, or any other individual's name, on the questionnaires. The questionnaires will be stored in a locked filing cabinet and all computer files will be password protected. It is anticipated that the data will be published for doctoral dissertation, books, and/or journals. However, names or other identifying information will not be included in any publication.

The questions in this study may trigger uncomfortable memories or cause emotional discomfort. Your child may discontinue participation in the study with no repercussions. Your child is encouraged to discuss those triggers with his or her individual therapist, school counselor or parent. If your child does not have an individual therapist, the hospital where the traumatized member of your family received treatment can recommend one for him or her. The same risk is true for each of the packets your child will receive in 6 months and one year because the questions are the same. Other possible risks would be loss of time and boredom. Any costs incurred as a result of participation in this study will be your responsibility.

The only direct benefits of this study to you and your child is that at the completion of the study, a summary of the results will be mailed to your child if you mark the box on the address card that indicates you desire them. Second, by returning the card your child will be entered into a drawing for \$100. A card will accompany each set of measures. Every card you return is an entry. If your child discontinues answering the questions, you may still get the results and enter the drawing by sending in the post card.

If you or your child has any questions about the research study you should ask the researchers: their phone numbers are at the top of this form. If you or your child has questions about your child's rights as a

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participant in this research or the way this study has been conducted, you may contact Ms. Tracy Lindsay in the Office of Research & Grants Administration at 940-898-3377 or e-mail HSRC@TWU.EDU.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help your child. However, TWU does not provide medical services or financial assistance for injuries that might happen because your child is taking part in this research.

Participation in this study is completely voluntary and your child may withdraw at any time without penalty. If you or your child has any questions, please contact the investigators at the above phone number. A copy of this dated and signed consent form will be mailed back to you following its receipt by the primary researcher.

Signature of Parent or Legal Guardian

Date

I have read the consent form and give permission for my child to participate in the study described above.

Signature of Child Participant

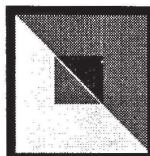
Date

Signature of Investigator

Date

Appendix D

Result Request and Drawing Entry



Request for Results and Drawing entry

Please print or type your address below to enter the lottery for the research project titled: The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A Study of Trauma Patients and Their Families.

This card will be separated from your questionnaire as soon as it is received.

Name _____

Address _____

City _____ State _____ Zip Code _____

I would like a copy of the results mailed to me when the study is finished

YES ____

NO ____

Thank you so much for your participation

Appendix E

Demographic Information: Patients and Family Members

Demographic Information: Patient

The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A Study of Trauma Patients and Their Families

Participants Name _____

Current Address _____

(To be coded and separated immediately upon receipt by principal researcher)

1. My current age is _____ 2. My gender is Female ☐ Male ☐
3. My sexual orientation would best be described as (Please choose one only):
Heterosexual ☐ Homosexual ☐ Bisexual ☐
4. I would consider my ethnicity to be (Please choose as many as are appropriate)
American Indian ☐ Asian ☐ African American ☐ White ☐
Hispanic ☐ Other ☐
5. If you selected more than one, please circle the group with whom you most identify with culturally. (Please circle only one)
6. In the past ten years, how many times have you been admitted to a psychiatric hospital?
Never ☐ This is my first time ☐ 1 other time ☐ 2 other times ☐
3 other times ☐ 4 other times ☐ 5 other times ☐ 6 other times ☐
7-10 other times ☐ 11-15 other times ☐ 15-20 other times ☐ 20 plus ☐
7. In the past 6 months, write briefly about how your family has changed if at all. You may use the back. (Optional)

Code For researcher use only
--

Demographic Information: Family

The Relationship of Trauma to Differentiation Levels, Schemas, and Family Environment: A Study of Trauma Patients and Their Families

1. In relationship to question # 2, what is the first and last name of the hospitalized adult?

(To be coded and separated immediately upon receipt by principal researcher)

2. Check the box that most applies to you: (Please check one only)

A. My spouse or partner has recently been hospitalized for trauma related symptoms ☐

B. My parent or an adult in my home has recently been hospitalized for trauma related symptoms ☐

C. I am an adult who lives in a home with someone who was hospitalized for trauma related symptoms ☐

3. My current age is _____

4. My gender is Female ☐ Male ☐

5. My relationship with my current or most recent partner is best described as (Please choose one only): Heterosexual ☐ Homosexual ☐ Bisexual ☐ No current partner ☐

6. I would consider my ethnicity to be (Please choose as many as are appropriate)
American Indian ☐ Asian ☐ African American ☐ White ☐
Hispanic ☐ Other ☐

7. If you selected more than one, please circle the group with whom you most identify with culturally. (Please circle only one)

8. In the past ten years, how many times have you been admitted to a psychiatric hospital?

Never ☐ This is my first time ☐ 1 other time ☐ 2 other times ☐
3 other times ☐ 4 other times ☐ 5 other times ☐ 6 other times ☐
7-10 other times ☐ 11-15 other times ☐ 15-20 other times ☐ More than 20 ☐

9. In the past 6 months, write briefly about how your family has changed if at all. You may use the back. (Optional)

Code
For researcher
use only

Appendix F

Appendix F

Assessment Instruments

Differentiation of Self Inventory, Modified Family Environment Scale [□] and

Young Schema Questionnaire [□]

Section I

The following 43 questions are concerning your thoughts and feelings about yourself and your relationships with other. Please read each statement carefully and decide how much the statement is **generally** true of you on a 1 (not at all) to 6 (very) scale. If you believe that an item does not pertain to you (e.g. you are not currently married or in a committed relationship, or one or both of your parents are deceased), Please answer the item according to your best guess about what your thoughts and feelings would be in that situation. Be sure to answer every item and try to be as honest and accurate as possible in your responses

		Not at all true of me				Very true of me
1	People have remarked that I am overly emotional	1	2	3	4	5 6
2	I have difficulty expressing my feelings to people I care for	1	2	3	4	5 6
3	I often feel inhibited around people I care for	1	2	3	4	5 6
4	I tend to remain pretty calm even under stress	1	2	3	4	5 6
5	I am likely to smooth over or settle conflicts between people I care about	1	2	3	4	5 6
6	When someone I am close to disappoints me, I withdraw from her or him for a time	1	2	3	4	5 6
7	No matter what happens in my life, I know I'll never lose a sense of who I am	1	2	3	4	5 6
8	I tend to distance myself when people get too close to me	1	2	3	4	5 6
9	It has been said (or could be said) of me that I am still very attached to my parents	1	2	3	4	5 6
10	I wish that I weren't so emotional	1	2	3	4	5 6
11	I usually do not change my behavior simply to please another person	1	2	3	4	5 6
12	My spouse or partner simply could not tolerate it if I were to express to him or her my true feelings about some things	1	2	3	4	5 6
13	Whenever there is a problem in my relationships, I am anxious to get it settled right away	1	2	3	4	5 6
14	At times my feelings get the best of me and I have trouble thinking clearly	1	2	3	4	5 6
15	When I am having an argument with someone, I can separate my thoughts about the issue from my feelings about the person	1	2	3	4	5 6
16	I am often uncomfortable when people get too close to me (emotionally)	1	2	3	4	5 6
17	It's important to me to keep in touch with my parents regularly	1	2	3	4	5 6
18	At times I feel as if I am riding an emotional roller coaster	1	2	3	4	5 6
19	There is no point in getting upset about things I cannot change	1	2	3	4	5 6
20	I am concerned about losing my independence in intimate relationships	1	2	3	4	5 6
21	I am overly sensitive to criticism	1	2	3	4	5 6
22	When my spouse or partner is away too long, I feel like I am missing a part of me	1	2	3	4	5 6
23	I am fairly self accepting	1	2	3	4	5 6
24	I often feel that my spouse or partner want too much from me	1	2	3	4	5 6
25	I try to live up to my parents expectations	1	2	3	4	5 6

26	If I have an argument with my spouse or partner, I tend to think about it all day	1	2	3	4	5	6
27	I am able to say no to others, even when I feel pressured by them	1	2	3	4	5	6
28	When one of my relationships becomes very intense, I feel the urge to run away from it	1	2	3	4	5	6
29	Arguments with my parent(s) or sibling(s) can still make me feel awful	1	2	3	4	5	6
30	If someone is upset with me, I can't seem to let go of it easily	1	2	3	4	5	6
31	I'm less concerned that others approve of me than I am about doing what is right	1	2	3	4	5	6
32	I would never consider turning to any family members for emotional support	1	2	3	4	5	6
33	I find myself thinking a lot about my relationship with my partner or spouse	1	2	3	4	5	6
34	I'm very sensitive to being hurt by others	1	2	3	4	5	6
35	My self-esteem really depends on how others think of me	1	2	3	4	5	6
36	When I am with my spouse or partner, I often feel smothered	1	2	3	4	5	6
37	I worry about people close to me getting sick, hurt, or upset	1	2	3	4	5	6
38	I often wonder about the kind of impression I create	1	2	3	4	5	6
39	When things go wrong, talking about them usually makes things worse	1	2	3	4	5	6
40	I feel things more intensely than others do	1	2	3	4	5	6
41	I usually do what I believe is right, regardless of what others say	1	2	3	4	5	6
42	Our relationship might be better if my spouse or partner would give me the space I need	1	2	3	4	5	6
43	I tend to feel pretty stable under stress	1	2	3	4	5	6

Section II

There are 50 statements following. They are statements about families. They ask you what you think your **current** family is like. Currently family is defined as your partner and or children if you are not living with your parents. It is defined as your parents and siblings also living in your house if you still live with your parents. If you are single, living alone, answer the questions in regard to your parents and/or siblings. You are to decide which of these statements is true of your **current** family and which are false. Circle True or False in the box following each statement.

If you think a statement is true or mostly true of your **current** family, circle true.
If you think a statement is false or mostly false of your **current** family, circle false.
Please be sure to answer every statement.

1	Family members really help and support one another	True	False
2	Family members often keep their feelings to themselves	True	False
3	Members fight a lot	True	False
4	Members do not do things on their own very often	True	False
5	Family members are rarely be ordered around	True	False
6	Members often seem to be killing time at home	True	False
7	Members say anything they want to around home	True	False
8	Family members rarely become openly angry	True	False
9	In the family, we are strongly encouraged to be independent	True	False
10	There are very few rules to follow in the family	True	False

11	Members put a lot of time and energy into what they do at home	True	False
12	It is hard to blow off steam at home without upsetting someone	True	False
13	Family members sometimes get so angry they throw things	True	False
14	Members think things out for themselves in the family	True	False
15	There is one family member who makes most of the decisions	True	False
16	There is a feeling of togetherness in my family	True	False
17	Members tell each other about their personal problems	True	False
18	Family members hardly ever lose their tempers	True	False
19	Members come and go as they want	True	False
20	There are set ways of doing things at home	True	False
21	Members rarely volunteer when something has to be done at home	True	False
22	If members feel like doing something on the spur of the moment, they often will just pick up and go	True	False
23	Family members often criticize each other	True	False
24	There is very little privacy in the family	True	False
25	There is a strong emphasis on following rules in the family	True	False
26	Family members really back each other up	True	False
27	Someone usually gets upset when you complain in the family	True	False
28	Family members sometimes hit each other	True	False
29	Family members almost always rely on themselves when a problem comes up	True	False
30	Everyone has an equal say in family decisions	True	False
31	There is little group spirit in the family	True	False
32	Money and paying bills are openly talked about in the family	True	False
33	If there's a disagreement in the family, members try hard to smooth things over and keep the peace	True	False
34	Family members strongly encourage each other to stand up for their rights	True	False
35	Members do whatever they want to in the family	True	False
36	Members really get along well with each other	True	False
37	Members are usually careful about what they say to each other	True	False
38	Members often try to one up or out-do each other	True	False
39	It is hard to be yourself without hurting someone's feelings in the household	True	False
40	Rules are pretty inflexible in the household	True	False
41	There is plenty of time and attention for everyone in the family	True	False
42	There are a lot of spontaneous discussions in the family	True	False
43	Family members believe that you don't ever get anywhere by raising your voice	True	False
44	Family members are not really encouraged to speak up for themselves	True	False
45	You can't get away with much in the family	True	False
46	Activities in the family are pretty well planned	True	False
47	Members are generally very neat and orderly	True	False
48	It is often hard to find things when you need them in the household	True	False
49	Being on time is very important to the family	True	False
50	People change their minds often in the family	True	False
51	Family members make sure their rooms are neat	True	False
52	Each person's duties are clearly defined	True	False

53	Money is not handled very carefully in the family	True	False
54	Dishes are usually done immediately after eating	True	False

Section III

Listed below are statements that a person might use to describe him or herself. Please read each statement and decide how well it describes you. When you are not sure, base your answer on what you emotionally feel. Not what you think to be true. Choose the rating from 1 to 6 that describes you and circle that number in the space following the statement

Rating scale:

1=Completely untrue of me

2=Mostly untrue of me

3=Slightly more true than untrue

4=Moderately true of me

5=Mostly true of me

6=Describes me perfectly

1	Most of the time, I haven't had someone to nurture me, share him/herself with me, or care deeply about everything that happens to me	1	2	3	4	5	6
2	In general, people have not been there to give me warmth, holding or affection	1	2	3	4	5	6
3	For much of my life, I haven't felt that I am special to someone	1	2	3	4	5	6
4	For the most part, I have not had someone who really listens to me, understands me, or is tuned in to my true needs and feelings	1	2	3	4	5	6
5	I have rarely had a strong person to give me sound advice or direction when I am not sure what to do	1	2	3	4	5	6
6	I find myself clinging to people I am close to because I am afraid they will leave	1	2	3	4	5	6
7	I need other people so much that I worry about losing them	1	2	3	4	5	6
8	I worry that people I feel close to will leave or abandon me	1	2	3	4	5	6
9	When I feel someone I care for pulling away from me, I get desperate	1	2	3	4	5	6
10	Sometimes I am so worried about people leaving that I drive them away	1	2	3	4	5	6
11	I feel that people will take advantage of me	1	2	3	4	5	6
12	I feel that I can not let my guard down in the presence of people or they will intentionally hurt me	1	2	3	4	5	6
13	It is only a matter of time before someone betrays me	1	2	3	4	5	6
14	I am quite suspicious of other peoples motives	1	2	3	4	5	6
15	I'm usually on the lookout for people's ulterior motives	1	2	3	4	5	6
16	I don't fit in	1	2	3	4	5	6
17	I am fundamentally different from other people	1	2	3	4	5	6
18	I don't belong; I 'm a loner	1	2	3	4	5	6
19	I feel alienated from other people	1	2	3	4	5	6
20	I always feel on the outside of groups	1	2	3	4	5	6
21	No man/woman I desire could love me once he/she saw my defects	1	2	3	4	5	6
22	No one I desire would want to stay close to me if she/he knew the real me	1	2	3	4	5	6
23	I am unworthy of the love, attention and respect of others	1	2	3	4	5	6
24	I feel that I am not loveable	1	2	3	4	5	6

25	I am too unacceptable in very basic ways to reveal myself to others	1	2	3	4	5	6
26	Almost nothing I do at school or work is as good as other people can do	1	2	3	4	5	6
27	I am incompetent when it comes to achievement	1	2	3	4	5	6
28	Most other people are more capable than I am in the areas of work or achievement	1	2	3	4	5	6
29	I'm not as talented as most people are in their work	1	2	3	4	5	6
30	I'm not as intelligent as most people when it comes to work or school	1	2	3	4	5	6
31	I do not feel capable of getting by on my own in everyday life	1	2	3	4	5	6
32	I think of myself as a dependent person when it comes to everyday functioning	1	2	3	4	5	6
33	I lack common sense	1	2	3	4	5	6
34	My judgment can not be relied upon in everyday situations	1	2	3	4	5	6
35	I don't feel confident about my ability to solve everyday problems that come up	1	2	3	4	5	6
36	I can't seem to escape that feeling that something bad is about to happen	1	2	3	4	5	6
37	I feel that a disaster (natural, criminal, financial, or medical) could strike at any moment	1	2	3	4	5	6
38	I worry about being attacked	1	2	3	4	5	6
39	I worry that I will lose my money and become destitute	1	2	3	4	5	6
40	I worry that I am developing a serious illness, even though nothing serious has been diagnosed by a physician	1	2	3	4	5	6
41	I have not been able to separate myself from my parent(s) the way other people my age seem to	1	2	3	4	5	6
42	My parent(s) or partner and I tend to be overinvolved in each other's lives and problems	1	2	3	4	5	6
43	It is very difficult for my parent(s) or partner and me to keep intimate details from each other without feeling betrayed or guilty	1	2	3	4	5	6
44	I often feel as if my parent(s) or partner are living through me—I don't have a life of my own	1	2	3	4	5	6
45	I often feel like I do not have a separate identity from my parent(s) or partner	1	2	3	4	5	6
46	I think if I do what I want, I'm only asking for trouble	1	2	3	4	5	6
47	I feel like I have no choice but to give in to other people's wishes, or else they will retaliate or reject me in some way	1	2	3	4	5	6
48	In relationships, I let other people have the upper hand	1	2	3	4	5	6
49	I've always let others make choices for me, so I really don't know what I want for myself	1	2	3	4	5	6
50	I have a lot of trouble demanding that my rights be respected and that my feelings be taken into account	1	2	3	4	5	6
51	I'm the one who usually ends up taking care of the people I'm close to	1	2	3	4	5	6
52	I am a good person because I think of others more than myself	1	2	3	4	5	6
53	I'm so busy doing for other people that I care about, I have little time for myself	1	2	3	4	5	6
54	I've always been the one who listens to everyone else's problems	1	2	3	4	5	6
55	Other people see me as doing too much for others and not enough for myself	1	2	3	4	5	6
56	I am too self conscious to show positive feelings to others (e.g., affection, showing I care)	1	2	3	4	5	6

57	I find it embarrassing to express my feelings to others	1	2	3	4	5	6
58	I find it hard to be warm and spontaneous	1	2	3	4	5	6
59	I control myself so much that people think I am unemotional	1	2	3	4	5	6
60	People see me as uptight emotionally	1	2	3	4	5	6
61	I must be the best at what I do; I can't accept second best	1	2	3	4	5	6
62	I try to do my best; I can't settle for good enough	1	2	3	4	5	6
63	I must meet all my responsibilities	1	2	3	4	5	6
64	I feel there is constant pressure for me to achieve and get things done	1	2	3	4	5	6
65	I can't let myself off the hook easily or make excuses for my mistakes	1	2	3	4	5	6
66	I have a lot of trouble accepting no from others when I want something from other people	1	2	3	4	5	6
67	I'm special and shouldn't have to accept the restrictions placed on other people	1	2	3	4	5	6
68	I hate to be constrained or kept from doing what I want	1	2	3	4	5	6
69	I feel like I shouldn't have to follow the rules and conventions other people do	1	2	3	4	5	6
70	I feel that what I have to offer is of greater value than the contributions of others	1	2	3	4	5	6
71	I can't seem to discipline myself to complete routine or boring tasks	1	2	3	4	5	6
72	If I can't reach a goal, I become easily frustrated and give up	1	2	3	4	5	6
73	I have a very difficult time sacrificing immediate gratification to achieve a long range goal	1	2	3	4	5	6
74	I can't force myself to do things I don't enjoy, even when I know its for my own good	1	2	3	4	5	6
75	I have rarely been able to stick to my resolutions	1	2	3	4	5	6

Appendix G

SCL-90-R



SCL-90-R[®]

Symptom Checklist-90-R

Leonard R. Derogatis, PhD

Last Name First MI

ID Number

Age

Gender

Test Date

DIRECTIONS:

1. Print your name, identification number, age, gender, and test date to the left.
2. When you respond to the items on pages 2 and 3, use a No. 2 pencil only and fill in the circles with heavy, dark marks.
3. If you want to change an answer, erase it carefully and then fill in your new choice.
4. Do not make any marks outside the circles.

**DO NOT SEND TO NCS ASSESSMENTS
USE ONLY FOR HAND SCORING**



NCS Assessments P. O. Box 1416 Minneapolis MN 55440
800-627-7271 <http://assessments.ncspearson.com>

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Product Number
05618

Below is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one

number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask them now.

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	
1	0	1	2	<input checked="" type="radio"/>	4	Bodyaches

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
1	0	1	2	3	4	Headaches
2	0	1	2	3	4	Nervousness or shakiness inside
3	0	1	2	3	4	Repeated unpleasant thoughts that won't leave your mind
4	0	1	2	3	4	Faintness or dizziness
5	0	1	2	3	4	Loss of sexual interest or pleasure
6	0	1	2	3	4	Feeling critical of others
7	0	1	2	3	4	The idea that someone else can control your thoughts
8	0	1	2	3	4	Feeling others are to blame for most of your troubles
9	0	1	2	3	4	Trouble remembering things
10	0	1	2	3	4	Worried about sloppiness or carelessness
11	0	1	2	3	4	Feeling easily annoyed or irritated
12	0	1	2	3	4	Pains in heart or chest
13	0	1	2	3	4	Feeling afraid in open spaces or on the streets
14	0	1	2	3	4	Feeling low in energy or slowed down
15	0	1	2	3	4	Thoughts of ending your life
16	0	1	2	3	4	Hearing voices that other people do not hear
17	0	1	2	3	4	Trembling
18	0	1	2	3	4	Feeling that most people cannot be trusted
19	0	1	2	3	4	Poor appetite
20	0	1	2	3	4	Crying easily
21	0	1	2	3	4	Feeling shy or uneasy with the opposite sex
22	0	1	2	3	4	Feelings of being trapped or caught
23	0	1	2	3	4	Suddenly scared for no reason
24	0	1	2	3	4	Temper outbursts that you could not control
25	0	1	2	3	4	Feeling afraid to go out of your house alone
26	0	1	2	3	4	Blaming yourself for things
27	0	1	2	3	4	Pains in lower back
28	0	1	2	3	4	Feeling blocked in getting things done
29	0	1	2	3	4	Feeling lonely
30	0	1	2	3	4	Feeling blue
31	0	1	2	3	4	Worrying too much about things
32	0	1	2	3	4	Feeling no interest in things
33	0	1	2	3	4	Feeling fearful
34	0	1	2	3	4	Your feelings being easily hurt
35	0	1	2	3	4	Other people being aware of your private thoughts
36	0	1	2	3	4	Feeling others do not understand you or are unsympathetic
37	0	1	2	3	4	Feeling that people are unfriendly or dislike you

	HOW MUCH WERE YOU DISTRESSED BY:					
	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	
38	0	1	2	3	4	Having to do things very slowly to insure correctness
39	0	1	2	3	4	Heart pounding or racing
40	0	1	2	3	4	Nausea or upset stomach
41	0	1	2	3	4	Feeling inferior to others
42	0	1	2	3	4	Soreness of your muscles
43	0	1	2	3	4	Feeling that you are watched or talked about by others
44	0	1	2	3	4	Trouble falling asleep
45	0	1	2	3	4	Having to check and double-check what you do
46	0	1	2	3	4	Difficulty making decisions
47	0	1	2	3	4	Feeling afraid to travel on buses, subways, or trains
48	0	1	2	3	4	Trouble getting your breath
49	0	1	2	3	4	Hot or cold spells
50	0	1	2	3	4	Having to avoid certain things, places, or activities because they frighten you
51	0	1	2	3	4	Your mind going blank
52	0	1	2	3	4	Numbness or tingling in parts of your body
53	0	1	2	3	4	A lump in your throat
54	0	1	2	3	4	Feeling hopeless about the future
55	0	1	2	3	4	Trouble concentrating
56	0	1	2	3	4	Feeling weak in parts of your body
57	0	1	2	3	4	Feeling tense or keyed up
58	0	1	2	3	4	Heavy feelings in your arms or legs
59	0	1	2	3	4	Thoughts of death or dying
60	0	1	2	3	4	Overeating
61	0	1	2	3	4	Feeling uneasy when people are watching or talking about you
62	0	1	2	3	4	Having thoughts that are not your own
63	0	1	2	3	4	Having urges to beat, injure, or harm someone
64	0	1	2	3	4	Awakening in the early morning
65	0	1	2	3	4	Having to repeat the same actions such as touching, counting, or washing
66	0	1	2	3	4	Sleep that is restless or disturbed
67	0	1	2	3	4	Having urges to break or smash things
68	0	1	2	3	4	Having ideas or beliefs that others do not share
69	0	1	2	3	4	Feeling very self-conscious with others
70	0	1	2	3	4	Feeling uneasy in crowds, such as shopping or at a movie
71	0	1	2	3	4	Feeling everything is an effort
72	0	1	2	3	4	Spells of terror or panic
73	0	1	2	3	4	Feeling uncomfortable about eating or drinking in public
74	0	1	2	3	4	Getting into frequent arguments
75	0	1	2	3	4	Feeling nervous when you are left alone
76	0	1	2	3	4	Others not giving you proper credit for your achievements
77	0	1	2	3	4	Feeling lonely even when you are with people
78	0	1	2	3	4	Feeling so restless you couldn't sit still
79	0	1	2	3	4	Feelings of worthlessness
80	0	1	2	3	4	The feeling that something bad is going to happen to you
81	0	1	2	3	4	Shouting or throwing things
82	0	1	2	3	4	Feeling afraid you will faint in public
83	0	1	2	3	4	Feeling that people will take advantage of you if you let them
84	0	1	2	3	4	Having thoughts about sex that bother you a lot
85	0	1	2	3	4	The idea that you should be punished for your sins
86	0	1	2	3	4	Thoughts and images of a frightening nature
87	0	1	2	3	4	The idea that something serious is wrong with your body
88	0	1	2	3	4	Never feeling close to another person
89	0	1	2	3	4	Feelings of guilt
90	0	1	2	3	4	The idea that something is wrong with your mind