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A Study of Object Relations Among Self-Injuring and Non-Injuring College Students

Lorrie A. Ness
University of Tennessee - Knoxville

To the Graduate Council:

I am submitting herewith a dissertation written by Lorrie A. Ness entitled "A Study of Object Relations Among Self-Injuring and Non-Injuring College Students." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Leonard Handler, Major Professor

We have read this dissertation and recommend its acceptance:

Robert Wahler, Priscilla Blanton, John Lounsbury

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Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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A STUDY OF OBJECT RELATIONS AMONG SELF-INJURING AND NON-INJURING COLLEGE STUDENTS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Lorrie Ann Ness

December 2008

DEDICATION

This work is dedicated to my husband Scott whose patience, encouragement and humor allowed me to keep the midnight oil burning, and to the memory of my mother who remains a constant source of comfort and inspiration.

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I would like to thank my advisor Leonard Handler for his efforts in teaching personality assessment, without which, this dissertation would not have been possible. I also wish to thank my colleagues Elaine Rivas and Eric Peters who gave up many evenings and afternoons to establish interrater reliability on the projective instruments used in this study. Lastly, I wish to thank Guy Edlis and Tanya Hess for their efforts in recruiting participants and helping to collect data.

ABSTRACT

The purpose of this study is to investigate object relational and interpersonal functioning among self-injuring and non-injuring college students. It was hypothesized that self-injury would be associated with more pathological object relational functioning as measured by the Mutuality of Autonomy (MOA) and Social Cognition and Object Relation Scale (SCORS). Additionally, it was hypothesized that self-injurers would evidence significantly more global interpersonal distress on the Inventory of Interpersonal Problems-32 (IIP-32), as well as show elevations in four of the subscales of the IIP-32; self-sacrifice, non-assertiveness, over-accommodation, and interpersonal neediness. Lastly, a number of publications suggest that childhood abuse is a significant risk factor for later developing self-injurious behaviors. This study hypothesized that object relational functioning as measured by the SCORS and MOA would account for additional variance in self-injury even after abuse is taken into account. A survey of 413 college undergraduates indicated that approximately 18.6% of the sample had self-injured at least once, and rates of self-injury were not significantly different across gender. All 77 of the individuals with a history of self-injury and 77 randomly selected individuals with no history of self-injury were re-contacted and invited to participate in further research. In total, 44 self-injuring and 34 non-injuring individuals took part in the second phase of research. Each of the 78 participants completed the IIP-32, SCORS and the MOA. Findings indicate that individuals with a history of self-injury evidenced significantly more pathological scores on the MOA than individuals with no such history. Results only partially supported the hypothesis that self-injury would be related to significantly more

pathological scores on the SCORS, with only one subscale of the SCORS being significantly related to self-injury. Participants with a history of self-injury also endorsed more interpersonal distress on the IIP-32 than did non-injuring participants. In addition, self-injurers were more likely to endorse a pattern of interpersonal functioning characterized by self-sacrifice, interpersonal neediness, non-assertiveness and over-accommodation than were individuals with no history of self-injury. Results of a hierarchical regression did not support the final hypothesis.

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SECTION 1

Background

Self-injurious behavior (SIB), or deliberately harming oneself without suicidal intent, is a phenomenon that nearly every clinician will encounter in the course of his or her career. And while studies suggest rates of self-injury in clinical populations remain quite high (Brodsky, Cloitre, & Dulit 1995; Soloff, Lis, Kelly, Cornelius & Ulrich, 1994; Zweig-Frank, Paris & Gunzder, 1994), one may be increasingly likely to encounter such behavior in non-clinical college students.

Self-injurious behavior is hardly limited to clinical populations. Research suggests that a significant number of individuals in the general population report having engaged in self-injury as well. Briere & Gill (1998) as well as Klonsky, Oltmanns & Turkheimer, (2003) found 4% of their non-clinical samples to be self-injuring. Rates for adolescents and young adults appear to be especially high. Ross & Heath (2002) found a prevalence rate of 13.9% in their sample of 440 high school students. Findings suggest that rates may be even higher for college students. For example, Gratz, Conrad & Roemer (2002) surveyed 133 college students with a mean age of 22.7 years and found that 38% indicated that they had engaged in self-injury at least once.

Prevalence rates of self-injury appear to decline with age (Suyemoto, 1998) though it is unclear whether this drop is reflective of a cohort effect or an actual decrease in the behavior with age. Despite the lack of clarity surrounding issues of age, the high rate of self-injury among college students forms our basis for conducting research with this population.

The consequences of self-injury are serious, even life-threatening, and can impact college students' lives in a variety of ways. Research aimed at uncovering the causes and functions of self-injury among young people is a critical step in designing interventions to reduce the alarmingly high prevalence rate.

Self-injury bridges the medical and psychological realms and exacts a steep price from individuals who engage in it. Students who deliberately mutilate themselves often find themselves or their families incurring dual costs of psychological and medical treatment. As a consequence, they may be less able to afford adequate and effective treatment and may even elicit hostile reactions from family members.

While many instances of self-injurious behavior do not require medical attention, research suggests that a substantial portion of emergency room visits occur due to non-suicidal episodes of self-injury. For example, researchers at one hospital in Leeds, England recorded 641 cases, during an eighteen-month span, in which individuals sought emergency room treatment for self-inflicted cutting (Horrocks, Price, House & Owens, 2003). Results from this same study also demonstrated that individuals are frequently treated for self-injury on multiple occasions.

While research is needed, one can speculate that college students who self-injure may run additional risks with regard to their academic success. Self-injury may contribute to social alienation, failing grades, distraction from studies, and destabilization of emotions due to time taken off of school as a result of severe wounding. These repeated negative experiences could have a grave impact on college students' self-image and motivation for achievement.

Given the high costs of health care, the vast number of young adults affected and

the potential negative ramifications this behavior could have on their academic success, efforts should be made towards understanding both the factors that contribute to the development of self-mutilation and factors that maintain reliance on such behavior. In addition, relatively little is known about self-injury among non-clinical populations. This study is designed to explore whether poor object relational functioning is associated with self-injurious behaviors among non-clinical college students.

SECTION 2

Literature Review

Classification of self-injury

Researchers have attempted to define self-injurious behavior (SIB) in a variety of ways. Currently, researchers focus on two aspects of self-injury when making categorizations; severity (Favazza, 1989) and the qualitative nature of the self-injury; such as frequency and timing (Favazza & Simeon, 1995). Favazza (1989) classifies the severity of self-injurious behavior into two categories: moderate and severe. Moderate self-injury is defined by Favazza (1989), as "skin cutting and burning, self-hitting, scratching, interfering with the healing of wounds, hair pulling and bone breaking." Severe self-injury is characterized by low-frequency highly destructive episode(s) that usually occur within the context of psychosis (Favazza, 1989). Examples of major self-injury include eye enucleation and self-castration.

One widely accepted classification system for the qualitative nature of self-injury divides SIB into four categories, stereotypic, major, compulsive, and impulsive (Simeon & Favazza, 2001). Stereotypic self-injury is thought to be carried out without conscious thought or premeditation and is often seen among individuals diagnosed with Lesch Nyhan Syndrome (Morales, 1999), mental retardation (Mikhail & King, 2001) and autism (Symons, Sperry, Dropik, & Bodfish, 2005), though it is by no means limited to such populations. Examples include head-banging, biting one's lips, and repetitive plucking of hair or skin.

Compulsive self-injury assumes a ritualistic nature whereby the individual planfully engages in self-injury that follows a certain prescribed set of rules. Rituals can

be developed concerning the tools used for self-injury, such as how an individual lays them out, cleans, or stores them. Other examples of rituals may concern how the injury is made and how the wound is dressed afterwards.

Impulsive self-injury is characterized by wounding that is less planful and methodical than compulsive self-injury. While individuals who engage in these two types of behaviors indicate that in either case the episode of self-injury is precipitated by experiences of mounting tension, the impulsive self-injurer reports immediate relief after injuring himself or herself, whereas the compulsive self-injurer reports relief stemming from completion of the entire ritual.

Other researchers have focused on the distinction between direct and indirect forms of self-injury, noting that behaviors not commonly thought of as self-injury, such as drinking too much alcohol and engaging in risky behaviors, may also constitute self-injurious behavior (Ross & McKay, 1979). Whereas direct forms of self-injury, such as cutting or burning oneself, involve behavior that is unmistakably directed at harming oneself, indirect self-injury encompasses behavior that may not indicate conscious and clear intent towards self-harm on the part of the individual. Where one draws the boundary between indirect self-injury, impulsive behavior and harmless daily activity is subjective. Researchers could label driving while speaking on a cell phone, drug use, and anorexia all as indirectly self-injurious, although one could debate whether all of these behaviors reflect and individual's inclination towards indirect harm.

Due to the difficulties in operationally defining indirect self-injurious behaviors, this study will only investigate direct forms of self-injury. In addition, direct forms of self-injury will be limited to those behaviors that Favazza (1989) categorized as

moderate. In keeping with Favazza's (1996) description of SIB, this manuscript also makes a distinction between pathological SIB and self-injury incurred as part of a cultural ritual or socially accepted body modification, such as tattooing, and will only refer to the former. Lastly, to be considered self-injury, the behaviors must be non-lethal in intent.

In regard to the qualitative nature of SIB, this study will investigate stereotypic, compulsive and impulsive forms of SIB and excludes major self-injury. Major self-injury is usually exhibited in the context of psychosis and is characterized by serious wounding, such as self-castration, that is usually not repetitive (Favazza, 1989). Major self-injury, such as self-castration or autoamputation of a limb, is unlikely to represent a maladaptive coping strategy and thus, falls outside the focus of this article. I propose that the other three categories are forms of SIB that may represent maladaptive strategies for coping with stress.

Theories of self-injury

There are several frameworks currently used to explain self-injury in humans. Such theories could be organized along several continua, for example, how the etiology of SIB is explained, the functions attributed to SIB, or the school of thought from which the theory has arisen. Suyemoto (1998) classified some of the current theories into six categories, determined by the function that SIB was proposed to serve within each model. The six functional models she identified are: (a) "the environmental model", in which the individual engages in SIB because he or she has learned to associate pain with care-taking and because the environment reinforces their use of self-injury (b) the "drive model", in which individuals engage in SIB to gain control over the death impulse (c) the "sexual model", in which the individual engages in SIB to simultaneously gain sexual

gratification and punish himself or herself for it (d) the "affect regulation model", where individuals self-injure to control their emotions (e) the "dissociative model", which proposes that individuals self-injure to end feelings of dissociation, and (f) the "boundaries model", that proposes that individuals self-injure to create boundaries between themselves and others in order to prevent themselves from experiencing a loss of self when experiencing a loss of "other". Suyemoto has simply collapsed the volumous theoretical material into discrete categories. Currently the link between SIB and child abuse, and the dissociative and affect-regulatory models described by Suyemoto (1998) are receiving much attention from researchers.

Many theorists and researchers have chosen to focus on the link between experiences of child abuse and SIB among non-psychotic individuals (Connors, 1996; Gratz, Conrad, & Roemer, 2002; Miller, 1996; van der Kolk, Perry, & Herman, 1991; Yates, 2003; Zlotnick et al., 1996). When considering self-injury that occurs in non-psychotic individuals who do not suffer from developmental disabilities, the link between experiences of childhood abuse and self-injury appears strong, although abused individuals report a number of differing motivations for engaging in this behavior. Himber (1994) found that when asked to state their reasons for engaging in SIB, some women from their sample of patients in a locked psychiatric ward specializing in the treatment of dissociative disorders stated that they did it to induce pleasurable feelings or to produce a tension release. They also stated that their SIB was reminiscent of childhood abuse.

In particular, the relationship between childhood sexual abuse and self-injury has been heavily investigated. (Briere et al., 1998; Brodsky et al., 1995; Brown, Houch,

Hadley, Lescano, 2005; Gratz, Conrad & Roemer, 2002; Himber, 1994; Nixon et al., 2002; van der Kolk, Perry & Herman, 1991; Turell & Armsworth, 2000; Yates, 2003; Zlotnick et al., 1996). Researchers consistently find that many self-injurers report having been sexually abused. For example, Zlotnick et al. (1996) found that 79% of their sample of inpatient self-injuring females had experienced sexual abuse. Although the majority of findings suggest that having experienced sexual abuse puts one at risk for self-injury, at least one researcher suggests that the link between sexual abuse and self-injury may be of secondary importance. Specifically, in determining the factors that differentiated self-injuring from non self-injuring inpatients, she found that sexual abuse did not explain a significant portion of the variance after controlling for diagnosis (Zweig-Frank et al., 1994). In order to determine if the relationship between sexual abuse and self-injury is inflated due to a reliance on clinical samples in which individuals may be more likely to have experiences such abuse, a review of studies conducted using general populations is called for.

Two studies were located that could shed some light on the topic. Briere and Gil (1998), tested whether or not rates of sexual abuse were significantly different between self-injuring and non-self-injuring participants. Results revealed a statistically significant difference between the two groups, with roughly 52% of the self-injuring group and 22% of the non-injuring group reporting a history of sexual abuse. Findings from a female sample drawn from the general population suggest that this association may be valid in other cultures as well. Researchers found that 47.8% of Turkish self-injurers reported a history of sexual abuse (Akyuz, Sar, Kugu & Dogan, 2005). While more research is

needed, the results of these studies indicate that experiences of sexual abuse may be quite common among self-injuring people drawn from the general population.

While there is no debate that trauma and self-injury are associated with one another, there remains a percentage of individuals who have not experienced trauma who engage in SIB. For example (Yates & Carlson, 2003) found that 22% of her sample of 36 self-injurers had no documented history of abuse.

Other research shows that being raised in other less-than optimal environmental conditions are associated with SIB as well, indicating that while outright abuse places one at risk for self-injury, conditions that are significantly less malevolent may also be sufficient to place one at risk. For example, physical separation from and emotional neglect by caregivers is also associated with later self-injurious behavior (Gratz et al., 2003). Specifically, for male undergraduates, physical separation from their father during childhood was associated with greater risk for developing self-injury. However, only emotional neglect by mothers or fathers and not physical separation was predictive of self-injury among college women (Gratz et al., 2002). Other negative experiences that fall outside the scope of abuse that are associated with self-injury are loss of a parent (van der Kolk et al., 1991), and frequent surgery (Rosenthal, Rinzler, Walsh, & Klausner, 1972).

Yates (2003) postulates that childhood abuse and trauma derails the normal development of affect regulatory techniques and the emergence of a coherent and integrated ego. She asserts that in such circumstances, SIB develops as a means of compensating for those developmental deficits. According to Yates, SIB acts as a primitive form of affect regulation for abused individuals. Additionally, the act of self-

injury is thought to provide individuals with poorly developed boundaries draw a tangible distinction between themselves and others.

Other researchers have focused on the affect regulatory aspect of SIB. Within this framework, SIB functions to enable an individual to gain some control over overwhelming affective states. Researchers, across a variety of studies, have found that participants regularly indicate that SIB fulfills some affect-regulatory function. For example, in a sample of inpatient and outpatient self-injuring adolescents, the two most frequent reasons for self-injury given on self-report measures of SIB dealt with affect regulation (Nixon, Cloutier, & Aggarwal, 2002). In an experiment comparing self-injuring prisoners' level of physiological arousal to that of both non-injuring prisoners and non-injuring non-prisoner controls in response to hearing scripts of neutral imagery, accidental injury, and an episode of self-injury, researchers found that for the self-injuring prisoners, simply imagining self-injury was associated with a decrease in physiological arousal as measured by finger blood volume, heart rate, maximum cardiotachometer, minimum cardiotachometer, respiration and skin resistance level (Haines, Williams, Brian, & Wilson, 1995). In addition, a qualitative study in which five borderline personality disordered individuals were given a self-administered questionnaire with open-ended questions about their most recent episode of SIB revealed that SIB was associated with relief from intense affective states. Participants often cited feelings of rejection as being characteristic of their mounting tension prior to engaging in SIB (Leibenluft, Gardner, & Cowdry, 1987). In addition, there is empirical support for the phenomenon that SIB increases in the face of anticipated loss. Rosen, Walsh & Rode, 1990) found that SIB increased in frequency in the days preceding the loss of important

relationships in an adolescent residential program. Perhaps these patients engaged in SIB to help control the overwhelming affect associated with the anticipated loss of a relationship.

In addition, the affect regulatory model of human self-injury is supported by research from the animal literature, showing that SIB may be responsible for an overall drop in a heart rate that had escalated in response to the experimental introduction of stress. Researchers in this experiment outfitted monkeys with vests equipped to measure their heart rate. The act of self-injury was associated with a slowing of the heart rate, back to baseline levels (Novak, 2003).

The relationship of dissociation to SIB is another prominent theme in the literature. From the standpoint of the dissociation model, SIB functions to reduce the dissociation triggered by exposure to intense affect. Several empirical studies have sought to explore the relationship of dissociation and SIB. In a sample of 60 inpatient women diagnosed with borderline personality disorder, researchers found higher scores on the Dissociative Experiences Scale to be related to presence of SIB (Brodsky et al., 1995). Several other empirical studies have discovered a correlation between dissociation and self-injury (Gratz et al., 2002; Zlotnick et al., 1996) and researchers have highlighted this association in theoretical material (Connors, 1996; Favazza, 1989). A factor analysis of reasons for SIB endorsed by a sample of self-injuring individuals revealed nine factors, one of which was "to decrease dissociative symptoms, especially depersonalization and numbing" (Briere & Gil, 1998). Further support for the theory that SIB reduces dissociation comes from semi-structured interviews of self-injuring women in an inpatient setting (Himber, 1994). Within a sample of adolescents of mixed diagnosis

at a partial hospitalization program in Canada, 40.5% of the patients sampled reported that they engaged in SIB to "stop feeling numb/out of touch" (Nixon et al., 2002). Cross-cultural research exploring SIB and dissociation has not been conducted. It is unclear whether patients in cultures that do not emphasize the concept of dissociation in imparting understanding to the individuals engaging in SIB would nevertheless describe a state of mind similar to dissociation that they attempt to control via SIB.

Not all researchers have found support for the theory that SIB and dissociation are related. In a sample of 150 outpatient females divided into two groups according to diagnosis, those with borderline personality disorder and those with other personality disorders, researchers found that after controlling for diagnosis in multivariate analysis, neither dissociation nor history of childhood sexual abuse was significantly associated with self-injury and only diagnosis was significantly related to SIB (Zweig-Frank, Paris, & Guzder, 1994). Similarly, van der Kolk et al. (1991) also found dissociation to be a relatively weak predictor of SIB.

In addition to the three theories just discussed, research has uncovered a number of other correlates of self-injury. While these correlates have not formed the basis for additional theories of self-injury, they provide useful information to clinicians and researchers alike about possible risk factors for the development of self-injury. A brief review of these correlates follows.

One correlate of self-injury is alexithymia (Paivio & McCullock, 2004; Zlotnick et al., 1996), or the inability to speak about one's feelings. Alexithymia is thought to be a consequence of a deficit in emotional awareness and researchers speculate that self-injury serves as a method of communication for such individuals. It is unclear how alexithymia

relates to experiences of trauma or dissociation and future research should investigate how the increased likelihood of alexithymia among self-injurers fits with current theories about self-injury.

A second correlate of self-injury is greater impulsivity. Herpertz, Sass & Favazza, (1997) found that people who self-injure manifest more impulsive behavior such as binge drinking, drug abuse, and acting in accordance with current wishes rather than planning for future needs. Their study also indicated that self-injury was associated with impaired serotonergic functioning in the brain, a condition that is often associated with difficulty inhibiting one's impulses. Future research should investigate whether greater impulsivity is related to all forms of self-injury or rather a specific subtype of self-injury, such as impulsive or major self-injury.

In addition, while SIB may be present to a greater or lesser extent within certain diagnoses, it has been documented as occurring in individuals with eating disorders (Favaro & Santonastaso, 2000; Favazza, DeRosear, & Conterio, 1989), rape victims (Greenspan & Samuel, 1989), individuals with combat related PTSD (Pitman, 1990), dissociative identity disorder (Himber, 1994; Saxe, Chawla, & van der Kolk, 2002), borderline personality disorder(Brodsky, Cloitre, & Dulit, 1995; Brown, Comtois, & Linehand, 2002; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994; Zweig-Frank, Paris, & Guzder, 1994), bipolar II disorder (van der Kolk et al., 1991), dysthymia, major depression, and dependent, histrionic, obsessive-compulsive, schizoid, schizotypal personality disorders (Simeon et al., 1992), and schizophrenia (Favazza, 1989).

Aside from the correlates of self-injury just reviewed, this manuscript has examined the traumagenic, dissociative, and affect-regulatory models of SIB. Across

these three models there is the common thread of attention to the self-injurer's traumatic past. In the traumagenic model it is boldly stated; in the dissociative model it is implied. In addition, recent theorists working within the affect-regulatory framework have proposed that SIB as a method of affect-regulation arises from a traumatic past (Yates, 2003). This emphasis on the traumatic past of self-injurers may be due, in part, to the fact that the vast majority of research has been conducted on clinical samples. Such samples may be more likely to have experienced child abuse and thus the correlation may be inflated due to sampling. Another mechanism that may be partially responsible for the emphasis on trauma is simply that repeated findings of a positive correlation between trauma and SIB may have contributed to a collective error in thinking. Although we are all familiar with the "correlation does not equal causation" mantra, it may have been forgotten in the study of human self-injury. In addition, experiences such as childhood sexual abuse act as red flags, grabbing one's attention and focus. So horrific and compelling is child abuse that it may be blinding researchers from exploring other ideas or thinking outside the box.

Despite the caution with which one should interpret the findings linking trauma with self-injurious behavior, the fact that traumatic, neglectful and chaotic childhood environments appear to be associated with the development of SIB warrants further investigation. Less than optimal environmental conditions in childhood are thought to make a significant negative impact on object relational functioning as an adult (Kernberg, 1984). Given the high percentage of self-injurers who report a history of abuse, neglect, parental loss or other trauma, one could hypothesize that a significant proportion of self-injurers may present with impaired object relational functioning. For this reason is it

important that researchers begin to research the internal object representations of individuals who engage in these destructive behaviors.

Thus far, little research on the object relational functioning of self-injurers has been published. A small study of 9 inpatient adolescent females indicates that self-injurers evidenced deficits in object constancy (Doctors, 1981). As a result, they are prone to experience a sense of fragmentation and disintegration in response to frustrating interpersonal situations. Doctors postulates that self-injury serves to derail the experience of disintegration once it has begun by providing clear boundaries between self and other. While this study provides evidence to suggest that impaired object-relational functioning may be related to SIB, the lack of a control group prevents one from determining whether similar object-relational functioning might be characteristic of other inpatient adolescent females who do not self-injure.

Fowler, Hilsenroth & Nolan (2000) used the Rorschach to investigate object relations of 48 self-injurers diagnosed with borderline personality disorder who were receiving inpatient treatment at a hospital in the Northeast. A comparison of the total of all pathological scores on the Mutuality of Autonomy scale between self-injuring and non-injuring groups indicates that self-injurers have a greater tendency to approach interpersonal relations in a more enmeshed manner, and may experience others as more malevolent than their non-injuring counterparts. Additionally, results from a comparison of scores on the Boundary Disturbance and Thought Disorder Scale (Blatt & Ritzler, 1974), indicate that self-injurers may be more likely to experience poor boundaries between self and other and to experience these boundaries as disintegrating. Self-injuring patients also showed greater use of primitive defenses such as splitting and idealization

that are thought to be characteristic of less well-developed object relational functioning. These findings are striking, given the homogeneity in diagnosis and demographics between the SIB and Non-SIB groups.

Thus far, no investigation into the object relational functioning of outpatients or non-clinical groups of self-injurers has been conducted, nor has any research investigated object relational functioning of self-injurers using measures other than the Rorschach. Additionally, very few males have been included in research investigating object relational functioning of self-injurers.

Object relations theory

No single cohesive theory of object relations exists. Rather, researchers and theorists have developed a number of related theories that share an emphasis on the profound impact that early relationships have on one's relationships as an adult (St. Claire, 1996). These theories are rooted in psychoanalytic psychology, though they diverge from classical analytic theory in a number of important ways. Perhaps the key distinction is the idea that human motivation or drive is fueled by strivings for interpersonal contact, whereas classical analytic theory instead posits that strivings for interpersonal contact are merely the ego's mechanism for satisfying the instinctual urges of the id.

Freud asserted that infants are born in a state of primary narcissism (Freud, 1989a). That is, all of the libinal energy is directed towards the self, whereas object relations theorists believe libinal energy is directed towards relationship with others. With the development of object relations theory, some psychologists began to reject the idea that human behavior could be explained by finding a socially acceptable compromise by

which aggressive and sexual impulses could be fulfilled and instead emphasized the impact of one's social environment. Melanie Klein was one of the first analysts to begin emphasizing the formative impact of social interaction on personality, and Fairbairn was the first to totally reject the idea that aggressive and sexual impulses were the building blocks of personality and interpersonal functioning (St. Clair, 1996). No longer was biology to determine destiny.

In order to adequately comprehend object relations theory, one must understand the sometimes-confusing nomenclature used by object relations theorists. To begin, an "object" refers to a person or thing towards which an individual attaches affective or emotional meaning. Usually objects refer to people, but one can have an emotional connection with animals such as pets, and even objects such as a baby blanket or a teddy bear. Thus, object relations theory deals with one's emotional attachments to, expectations and representations of others. More terminology will be explained as the discussion of object relations theory progresses.

Fundamental to all object relations theories is the idea that, beginning in infancy and continuing on throughout one's life, individuals develop mental representations of their environment as they interact with objects. Object relations theorists assert that internal objects, or mental representations of people are based on one's perception of actual people in one's environment, or external objects (St. Claire, 1996).

Internal objects are reflective of one's actual interpersonal experiences, but are distorted somewhat by one's own subjective perceptions of their environment and the meaning one attributes to ones experiences. These internal objects then act as guideposts throughout life and are used as a rule of thumb for how we might expect others to act

towards us in different situations and contexts. Thus, if one has had predominately negative interpersonal interactions whereby trusted others have continually behaved in a deceitful, disappointing or abusive manner, an individual might come to expect similar behavior from other individuals despite others' good intentions. These expectations can influence one's behavior towards others and may cloud one's ability to accurately interpret other's behaviors and motivations. Thus, internal objects have the power to color one's actual interpersonal interactions and could direct individuals to behave in ways that elicit others to fulfill ones negative or positive expectations (St. Claire, 1996).

Additionally, Fairbarin (1952) asserted that the development of internal objects leads to the development the "internal saboteur" or antilibinal ego. The internal saboteur corresponds roughly to Freud's (1989b) concept of the superego and acts as a regulatory structure of one's behavior. In the beginning, one's behavior is governed by the sanctions imposed by external objects or people in the environment. As internal objects form and develop in complexity, they assume the role of governing behavior that external objects once played. This is how Fairbairn accounts for the development of the conscience (Fairbairn, 1952).

Object relations theorists (St. Claire, 1996) assert that individuals are not born with the capacity to form fully mature internal objects by virtue of the limited cognitive capacities possessed by infants, and their limited experience operating in their environment. Nor do object relations theorists assert that all adults have formed a fully mature object relational schema. Rather, object relations mature gradually depending upon whether infants and young children have supportive caregivers. These theorists also posit that a hostile, chaotic, or unsupportive environment can derail the development of

object relational functioning, sometimes leaving adults to stagnate and continue to rely on an object relational schema that is less developmentally mature than one might expect for an adult (St. Claire, 1996). These impaired object relational schemas are thought to be the root of many forms of psychopathology.

A complete review of all object relations theories is well beyond the scope of this manuscript. The three theorists whose ideas are most pertinent to this manuscript are Fairbairn, Winnicott and Mahler. An abridged review of each of their respective theories follows.

Fairbairn. W.R.D. Fairbairn (1954b) rejected the idea of instinctual impulses originating from the id and the ego's role in satisfying those impulses in an acceptable manner. Instead, he viewed impulses as social strivings originating in the ego itself. Central to his theory of object relations is the affective quality of one's interactions with external objects; whether interpersonal interactions are perceived as satisfying or frustrating. In an ideal environment, perhaps all interpersonal interactions would be of a satisfying nature. However, children inevitably face having their needs or desires frustrated by their caretakers at some point in their childhood. It is the coexistance of both satisfying and frustrating qualities in one's caretakers that causes an infant to develop a sense of ambivalence. Fairbairn asserts that internal objects are born out of a need for the infant to cope with contradictory satisfying and frustrating aspects of their caregivers as they arise.

Fairbairn (1954a) asserted that children who experience frustrating care giving must develop compensatory internal objects that satisfy their needs. He hypothesized that the internalization of caregivers' negative attributes, along with the compensatory

internal objects that children develop, are created by the fragmentation of the ego. In addition, these fragments are dynamic in that they represent needs and motivations and come into conflict with each other and which can cause interpersonal difficulty for the individual later in life. He dubbed this fragmentation of the ego the "endopsychic situation" (Fairbairn, 1954a) and stated that it comes about as infants struggle to deal with ambivalent reactions towards their caregivers.

Specifically, the ego ceases to remain totally intact. Fairbairn assumed that children are born with an intact "central" ego, and asserted that through the process of internalization of objects and the repression of those internalizations, the ego becomes divided into three components: the central ego, the libinal ego, and the antilibinal ego (Oberlechner, 2002).

Fairbairn (1954a) asserts that endopsychic ego structures are formed in standard way and are motivated by a child's need to create an environment that meets their needs while not alienating the caregiver on whom they are entirely dependent. First, he states that children split their experience with their caregiver into its positive and negative aspects. Secondly, the infant or child then internalizes the negative object. For example, suppose a young child continually finds itself in the position of receiving frustrating interpersonal interactions every time it seeks consolation. Perhaps this child has a parent who meets it's physiological needs, but does little else. For example, the child falls down and scrapes herself and finds herself in the position of having cried out in an effort to obtain comfort, but having received none. This child then internalizes the bad (not comforting) qualities of the parent and does not internalize the positive qualities (providing for it's physical needs) of the parent. The negative inner representation of the

parent, however, continues to be experienced as frustrating for the child. The child continues to hope that the internalized object might react in a satisfying manner, but is confronted with the knowledge that it has always been frustrating. The child's solution to this new internal delima is to further split the internal object into two parts. The excitatory part, that represents the child's needs, in this case the hope for comfort, and the frustrating part, that represents the negative aspect of the object, in this case the parent's lack of comfort. The ego then represses both the exciting and frustrating qualities of the internal object, thus excising the external object of any negative qualities. Fairbairn believed that aggression was used to repress both aspects of the negative representation in a process he labeled primary repression (Fairbairn, 1952). Fairbairn states that a child must then utilize "secondary repression" to repress their aggressive impulses directed at the object so as to leave their attachment to the object undamaged (Fairbairn, 1952).

By repressing the internal object, a part of the child's ego becomes inaccessible. With each successive time these steps are carried out more and more of a child's ego becomes inaccessible. In time the frustrating aspects of internalized objects form the antilibidinal ego. This part of the endopsychic structure acts more or less as Freud postulated the superego acts. Conversely the libinal ego represents one's urges towards satisfaction.

In sum, Fairbairn's complicated account of ego fragmentation occurs in the service of helping a child remain connected with important others in his or her life, even when others are frustrating the child's needs. Fairbairn asserted that children who find themselves in an environment with caregivers who are abusive or inadequate and who continually frustrate the child by not satisfying his or her needs, are faced with a terrible

dilemma. He asserts that children in such situations, by virtue of their very powerlessness and helplessness, have control only over themselves. It is a matter of survival for children to preserve the façade of caregivers who do, in fact, meet their needs as they are in a totally dependent situation. In order to maintain the façade, children internalize the negative or frustrating aspects of their caregivers and then repress those negative internalizations and their own aggressive impulses towards these objects, thereby deleting from their internal representation of their caregivers those aspects that are abusive or frustrating. In this manner children preserve their much-needed relationship with their caregivers, but at the cost of fragmenting their own egos. Simply put, it is better to have some interpersonal relations, than none at all, especially when social relations are crucial for an infant's survival.

Fairbairn considered object relations to develop according to three stages that progress from total dependency and an inability to mentally represent entire objects at once to independence and the ability to mentally represent entire objects (Fairbairn, 1954b). The child progresses through these stages as his or her cognitive capabilities mature and the child acquires more experience with others.

Winnicott. D. W. Winnicott is perhaps best known for his writings on the impact of parenting on developing object representations, although he never outlined a true theory of object relations. His ideas about the impact of parenting (Winnicott, 1986a) on the development of object relations is especially pertinent to this manuscript, as previous research shows that a significant number of self-injuring individuals have experienced abuse or neglect during childhood. Experiences such as those were hypothesized by Winnicott to derail optimal object relational development.

Winnicott asserts that in order for optimal development to occur, the needs of the infant and the reactions of the mother must be in relative agreement. Winnicott labeled caregiving that adequately adjusted to and provided for an infant's needs as "good-enough mothering" (Winnicott, 1986b). Problems arise when caregivers fail to protect infants from dangerous or harmful environments. For example, should caregivers repeatedly frustrate the infant's needs, the infant, being still totally dependent on the caregiver, will eventually learn to react with compliance and become passive. This compliance allows for continued object-seeking and represents the dilemma the infant faces; having some needs met, or none at all. This compliant form of relating to caregivers was labeled as the development of a "false self" (Winnicott, 1965).

As an adult, an infant who developed this mode of relating with others might have a very difficult time asserting his or her own needs and instead may choose to relate to others on their terms, however unfulfilling that might be, fearing perhaps that asserting oneself will lead to isolation from and rejection by others.

Like Fairbairn, Winnicott conceived of object relations as developing from a state of total dependence towards gradual independence from caregivers. He described infants as having a limited capacity to understand that needs are met by sources outside of themselves. With "good-enough mothering" infants feel a physiological need such as hunger and experience the hunger being satisfied during feeding. Because of infants' limited cognitive capacities, they feel as though they have omnipotent control over their environment. That is, they experience hunger and then a caretaker magically reduces their hunger through feeding. Winnicott asserts that infants feel as though their very wish for food causes the food to manifest.

Winnicott believed that infants develop a sense of self and relinquish their delusion of omnipotent control as caregivers gradually begin to frustrate infants' needs by allowing them more independence to manipulate their environment and discover that outside objects such as bottles of formula can be found to satisfy their needs. As infants begin exploring their environment a sense of self that is separate from the external environment develops. As children mature, they internalize the functions of caretakers and significant others in their lives and gradually move towards greater and greater independence.

Mahler. Margaret Mahler (1968) proposed a third theory of object relational development that is of importance for this manuscript. A feature that is unique to her particular conceptualization of child development is that it was based upon careful observations of mother-child interaction in her laboratory in New York. Like both Fairbairn and Winnicott she outlines the development of object relations as progressing from utter dependence and enmeshment towards gradual mutual independence (St. Clair, 1996).

Mahler outlined her theory of emotional and object relational development in her 1968 publication, *On Human Symbiosis and the Vicissitudes of Individuation.* She asserts that infants begin life in a state of normal autism. Normal autism is a state during which the infant is simply adjusting to life outside of the womb and during which there is no striving towards interpersonal connection. The infant is totally dependent and cannot differentiate between self and other. Development progresses towards normal symbiosis beginning in the second month of life, which roughly corresponds to Winnicott's second stage in object relational development. During normal symbiosis, the infant develops a

sense of boundary between self and environment. However, the boundary includes both it's self and it's primary caretaker. Thus the infant feels fused with the caretaker but recognizes that other external objects are not within the boundary that envelops infant and caretaker.

During the third stage of development, "separation/individuation", infants gradually learn to distinguish themselves as separate and autonomous psychological beings from their caretakers. Infants learn to make this distinction gradually. The first steps towards autonomy are relatively small. For example, infants begin using posture to create distance from themselves and their caretaker. Mahler noted that infants in this stage often make efforts to climb from their mother's lap and play near her feet, or hold their bodies away from their caretakers when being held or carried.

Mahler's observations indicate that the next steps towards greater independence occur when infants begin to walk. In the context of adequate parenting, and with caretakers who allow their children to differentiate, infants will begin to play further away from their caretakers, while periodically checking back to make sure the caretaker is still present.

As children continue to develop greater independence from their caretaker, they eventually develop anxiety related to their separateness and experience what Mahler (1968) labeled the rapprochement crisis. During this phase children simultaneously strive for independence, yet experience anxiety related to feeling separate. Behaviors in which children approach caretakers then run away before the caretaker can see them or touch them are common and Mahler considered them reflective of children's ambivalent feelings related to their newly developing independence.

Mahler believed object relational development culminated in object constancy, or the internalized representation of others. Having internal representations of others frees infants from having to approach or make contact with caregivers in order to reassure themselves that they are there. At last their relationship with others has become portable and even in the absence of significant others, young children can maintain connection with them.

In sum, theories of object relations assert that abusive or neglectful caretakers can cause a disturbance in the development of mature object relations. A developing individual might get "stuck" at any stage in the development of object relations and thus experience interpersonal difficulties throughout his or her adult life as a result. Similarly, it is theorized that some individuals who engage in self-injury are experiencing interpersonal difficulties that mirror those that might be seen if the development of mature object representations were derailed. For example, self-injurers indicate that they sometimes injure themselves in order to feel "real" and draw a distinction between themselves and others. Difficulties in distinguishing self-other boundaries are reflective of a developmental insult that might have occurred early on in one's development. Differentiating between self and other is among the very fist steps towards object relational maturity and it the basis upon which other steps are mastered. Without mastering this stage, individuals' interpersonal interactions may be characterized by fear of disintegration and feelings of annihilation and extreme narcissistic insult when frustrated by others in their environment.

In addition, research indicates that a number of self-injurers seem particularly sensitive to feelings of loss or rejection and appear hyper-alert to cues that rejection is

about to occur. This type of concern may be reflective of developmental insults that occur during the phase Mahler refers to as rapprochement crisis. Individuals whose caretakers react to their infants with rejection as their infants navigate this process of separation may develop fear of rejection and thus limit the development of self-assertion skills in service of remaining connected. Thus, those individuals who indicate a pattern of SIB that corresponds to fears or feelings of rejection might have had difficulty overcoming the rapprochement crisis. Thus, the correlates of self-injury such as dissociation and fear of rejection that outwardly seem radically different may be connected by the theme of object relational disturbance.

Cautions. As Charlton, (1997) pointed out, the theory of object relations is eloquent and extremely useful to clinicians and researchers as a tool for understanding human pathology and interpersonal functioning. However, the core concepts of object relations theory can hardly be considered scientific because infants' internal representations cannot be investigated, and thus many theories of object relations cannot be tested scientifically.

At best, object relations can be measured in children and adults and the tools researchers utilize for the measurement of object relational functioning hinge upon finding patterns of interpersonal interactions and expectations that clients project upon ambiguous stimuli. What is known is that adults and children do exhibit characteristic patterns of interpersonal expectations and behaviors that are impacted by the care-giving environment. In addition, these characteristic patterns often resemble the stages of development outlined by Fairbairn, Winnicott, and Mahler. Despite the existence of characteristic types of expectations to which an individual might cling and despite

researchers' abilities to measure these expectations with projective testing, the processes of object relational development outlined by Fairbairn and others remain debated by some.

Measurement of object relations

Researchers have traditionally utilized projective techniques in an effort to gather data about an individual's object relational functioning. Two of the most frequently used scales are the Mutuality of Autonomy (MOA) (Urist, 1977) and the Social Cognition and Object Relations Scale (SCORS) (Westen, 1995, Hilsenroth, Stein, & Pinsker, 2004) which were developed for use with the Rorschach and the Thematic Apperception Test (TAT), respectively.

Social Cognition and Object Relations Scale *SCORS.* The SCORS is a coding system designed to rate the quality of one's object relations as evidenced in an individual's narratives. The SCORS could be used to assess object relations evident in a number of narrative forms, such as the Early Memories Protocol (Fowler, Hilsenroth & Handler, 1995), or semistructured interview responses (Porcerelli, Cogan & Hibbard, 1998).

The SCORS requires researchers to rate object relational functioning on eight dimensions of interpersonal and intrapsychic functioning using a 7-point anchored scale. The eight dimensions are as follows: Complexity of Representations, Affective Quality, Emotional Investment in Relationships, Emotional Investment in Morals, Social Causality, Aggression, Self-esteem and Identity and Coherence of Self.

The Complexity of Representations variable assesses the degree to which others are viewed as separate from the self and in possession of both positive and negative

qualities. Poor complexity of representations could indicate that an individual relies upon splitting as a means of coping with others' frustrating and satisfying qualities rather than viewing others as multifaceted cohesive others. Affective Quality of Representations assesses whether an individual's expectations about others in the world are largely positive or negative. That is, do they expect fulfilling relationships or abusive and disappointing ones. Emotional Investment in Relationships assesses the extent to which one is committed in one's relationships and holds deep emotion and concern for others. Individuals scoring low on emotional investment may have difficulty recognizing others' emotional needs and may have shallow relationships designed only to meet narcissistic needs. Emotional Investment in Morals assesses the degree to which one is capable of empathy and remorse and has internalized a value system they use in an effort to make decisions about moral situations. Social Causality provides a measure of how well an individual understands consequences of his or her own and others' actions. The Aggression variable assesses the extent to which an individual has control over aggressive impulses and the Self-Esteem variable assesses whether an individual feels positively or negatively about one's self and one's capabilities. Lastly, Identity and Coherence of self measures the extent to which an individual experiences one's self as stable and coherent, with a sense of goals and a future. Individuals who score low on this variable may have a sense of self that changes depending on the environment or is subject to fragmentation.

The SCORS has been demonstrated as sensitive to symptom improvement following psychoanalytically-oriented inpatient treatment. For example, pre and post-tests indicated higher functioning in four dimensions of object relational functioning

following 15 months of treatment The four dimensions that showed improvement are Complexity of Representations, Affective Quality of Representations, Emotional Investment in Relationships, and Social Causality (Porcerelli, Sharhar, Blatt, Ford, Mezza, & Greenlee, 2006). In addition, Ackerman, Hilsenroth, Clemence, Weatherill & Fowler (2000) indicate the SCORS is predictive of treatment continuation with individuals who scored lower in the dimension of affective quality of representations and higher in the dimension of emotional investment in relationships being more likely to continue psychotherapeutic treatment.

A review of the literature by Peters, Hilsenroth, Eudell-Simmons, Blagys & Handler, (2006) indicates that the SCORS is able to distinguish between an number of diagnoses and is a sensitive measure of object-relational and symptomological presentation. Their review highlights the ability of the SCORS to discriminate among subgroups of borderline personality (Tramantano, Javier & Colon, 2003), and to distinguish between borderline personality disordered, depressive and normative groups (Westen, Lohr, Silk, Gold & Kerber, 1990), hospitalized individuals who had and had not attempted suicide (Kaslow, 1997), and Cluster B and C personality disorders (Ackerman, Clemence, Weatherill, & Hilsenroth, 1999). Given the sensitivity of the SCORS and its ability to discriminate among such groups, it was chosen for inclusion in this study in an effort to explore possible differences in object relational functioning manifested by two groups of participants, self-injuring and non-injuring college students.

Mutuality of Autonomy. Originally published by Urist (1977), the Mutuality of Autonomy scale is designed to measure object relational functioning as evidenced by responses on the Rorschach. The scale is used to code any response in which an

individual perceives the blot as containing two or more animate or inanimate objects engaged in a real or implied relationship with each other. Examples of implied relationships include "a squashed bug", thus implying a relationship between the insect and an object that smashed it.

Each response that meets these criteria is rated along a seven-point anchored scale with higher scores indicating more pathological responses. In accordance with the theories put forth by Fairbairn and Mahler, the seven-point scale is organized to capture the progression of object representation from a state of enmeshment with others, towards mature relationships characterized by independence and mutuality. Scores of 1 or 2 are considered to represent more mature healthy object relational functioning. A classification of "1" would be made if the relationship acknowledges mutual independence and reciprocity. An example of a response that could be scored as "1" is, "two children planning a party for their parents". A score of "2" would be awarded in instances in which objects are engaged in parallel activity and less emphasis is given on reciprocity or mutuality. An example of a response that would be scored "2" is, "two lizards climbing up a mountain." Scores of 3 or 4 represent considerably less independent object relatedness in which others are seen as extensions of the self or are utilized as scaffolding for one's self. An example of a response that could be scored as "3" is "two people leaning on each other." A score of 4 is slightly more pathological than a 3 and is awarded when the distinction between self and other is becoming noticeably impaired. An example would be "Siamese twins joined at the waist." Scores of 5 or higher are considered to be the most pathological and are reflective of disturbance of the boundary between self and other and negative expectations from others in one's

environment. A response would be coded as "5" if it contained themes of outside control, manipulation or coercion. An example is "a shaman casting a spell on this village." Scores of 6 and 7 contain themes that are more hostile and malevolent than those scored as a "5". A score of "6" is given for responses involving an assault, violence or destruction. An example is "a man hitting a cat with a bat." Scores of 7 are reserved for those responses that involve catastrophic loss of individuality or total emersion in another. Examples include, "a nuclear explosion consuming everything around it", or "a man that was completely eaten up by a lion."

A number of calculations are used in scoring the MOA. Among the most frequently utilized scoring procedures are the calculation of a mean for all scoreable responses, the sum of all scoreable responses and the total number of responses, referred to as "R". In addition, a pathology score is calculated by summing all scores of 5 or higher for a protocol. Also of importance is the highest and lowest score in any given record.

Hypotheses

Based on a review of the literature that indicates that childhood abuse and neglect are related to both self-injury and pathological object relational functioning, this study seeks to examine the relationship between self-injury and object relations. Thus study tests five hypotheses. The first hypothesis is that individuals with a history of self-injury will evidence significantly lower scores than individuals with no history of self-injury on six subscales of the SCORS; Complexity of Representations, Affective Quality of Representations, Emotional Investment in Relationships, Aggression, Self-Esteem, and Identity. Lower scores on the SCORS indicate more pathological object relational

functioning. The two remaining subscales, Emotional Investment in Morality and Social Causality appeared to deal with theoretical constructs other than object relations and were thus excluded.

Second, it is hypothesized that individuals with a history of self-injury will evidence significantly higher MOA PATH scores than individuals with no history of self-injury. In contrast to the SCORS, higher scores, not lower ones, indicate more pathological object relational functioning.

The third and fourth hypotheses concern the Inventory or Interpersonal Problems-32 (IIP-32). The IIP-32)was utilized as an additional measure of interpersonal functioning. It provides a single score of overall interpersonal discord as well as categorizes interpersonal style according to a circumplex model with dominance/submission, and affiliation/isolation comprising its main axes. The IIP-32 categorizes individuals according to their style of interpersonal interaction. The IIP-32 produces 8 categories, displayed in Figure 1. The third hypothesis is that the self-injuring group will evidence higher, or more symptomatic, total IIP-32 scores. The fourth hypothesis is based on Winnicott's assertion that a false self characterized by over-compliance may develop as the result of poor parenting or abuse. It was hypothesized that self-injurers would evidence interpersonal relations characterized by neediness, willingness to sacrifice one's own needs for others, over-accommodation, fear of asserting oneself as well as greater overall symptomology as measured by their total score. These tendencies might be employed by self-injurers in an attempt to placate others in order to prevent loss or rejection. These tendencies are predicted to manifest themselves by way of higher scores on the intrusive/neediness, nonassertive and over-

accommodation scales of the IIP-32. Additionally, the IIP-32 may provide a reference point for determining to what degree pathological object relations as evidenced by the projective tests are experienced as affecting interpersonal functioning by the participants.

Lastly, a number of studies have shown a clear link among experiences of childhood abuse and neglect and greater symptoms of psychopathology and self-injury. The fifth and final hypothesis is that object relational functioning as measured by the MOA PATH and the six subscales of the SCORS of interest to this study will account for additional variance in self-injury after child abuse is accounted for. Two hierarchical regression analyses will be conducted with childhood physical abuse, sexual abuse, and total score on the SCL-90-R entered first in that order, followed by either the MOA PATH scores or the six domains of the SCORS utilized in this study. It is hypothesized that after childhood abuse and psychopathological symptoms have been accounted for, object relational functioning will still account for a significant amount of the variance in SIB status. In addition, should a relationship exist between self-injurious behaviors and object relational functioning, analysis will be conducted to determine if object relational functioning mediates the relationship between childhood abuse and SIB.

Given the meager amount of research concerning object relational functioning of self-injurers, additional exploratory analyses will be conducted in an effort to generate future research.

SECTION 3

Methods

Phase 1 measures and design

Data collection took place in two phases. The first phase involved filling out a large questionnaire containing several measures: the Symptom Checklist 90-R, Self Harm Behavior Survey and the UCLA Loneliness Scale. Graduate student researchers from this lab then made in-class announcements in introductory psychology courses inviting students to participate in the study for extra credit. Researchers read the same description of the research to each class and afterwards students were allowed to sign up for participation (see appendix).

The first phase of data collection occurred in small groups. Students arrived at a classroom reserved for this research project and were asked to sit apart from one another. They signed an informed consent prior to completing the survey. Each informed consent was stapled to the front of the questionnaire packet. The questionnaire packet and the informed consent contained matching ID numbers. On the informed consent, students were made aware that they might be re-contacted for future research opportunities and all students provided a telephone number for this purpose. Prior to handing in the questionnaire packet, students detached the consent form and placed it in a separate box.

The measures included in the questionnaire were as follows: a shortened version of the Self-Harm Behavior Survey (Favazza, 1989), Symptom Checklist-90-R (Derogatis, 1975) and the UCLA Loneliness Scale version 3 (Russell, 1996).

The Self-Harm Behavior Survey was shortened from 178 to 45 questions with the permission of its original author. The remaining questions were open-ended and

participants were asked to indicate in which, if any, of the self-injurious behaviors found in Table 1 they had engaged. All tables are found in the appendix. In addition, participants were asked to estimate the number of times they had engaged in this behavior, the age at which they first began engaging in the behavior and when they last self-injured. Additionally, this survey was used to collect demographic information about our participants including age, gender, level of education, college major and ethnicity.

Because this survey is strictly designed to gather information and does not yield any sort of behavioral score, shortening the measure does not interfere with its validity in the way shortening items on other scales might. The scale is designed solely to collect descriptive information about self-injury and participants answer open-ended questions about whether they engage in a variety of self-injurious behaviors. This instrument is designed solely for the collection of demographics and information about whether a participant self-injures and currently has not been subjected to evaluation of its reliability or validity.

The Symptom Checklist-90-R is a ninety-question measure in which participants are asked to rate how characteristic of themselves certain traits are. This measure assesses symptoms of psychological distress such as depression and anxiety. Raw scores are added to yield a measure of global symptomotology.

The UCLA Loneliness Scale is a measure of subjective isolation, or loneliness. It is a twenty-item questionnaire in which participants are asked to rate statements about certain feelings, according to how frequently they experience those feelings. Data suggest that this is a reliable and valid measure of loneliness, with good internal consistency (with items' intercorrelation scores ranging from .89 to .94 (Russell, 1996).

Results of test-retest reliability after a one-year time lapse were high, r = .73 (Russell, 1996). In addition, the UCLA Loneliness Scale has been found to be significantly correlated with several other measures of isolation and loneliness including the NYU Loneliness Scale (Rubenstein & Shaver, 1982) and the Differential Loneliness Scale (Schmidt & Sermat, 1983). Research demonstrating significant negative correlations between the UCLA Loneliness Scale and various measures of social support (Constable & Russell, 1986; Russell, Altmaier, et. al., 1987)

Participants were all students enrolled in undergraduate introductory psychology courses at a large southeastern university. All participants gave their informed consent and received extra credit in exchange for their participation. A total of 413 students took part in the first phase of the study. Data from one participant were excluded from analysis due to incomplete responding on the Self-Harm Behavior Survey. Of the 412 remaining participants, 146 were male and 266 were female. Of the 257 participants who indicated their ethnicity on the questionnaire, 73.5% were Caucasian, 14.4% were African American, and 5.8% were Latino. Of the 78 individuals who took part in phase two, 25 were male and 53 were female. A similar ethnographic composition was found for those participants who participated in the second phase of data collection. Like in phase one, a larger percentage of individuals chose not to indicate their ethnicity. Of the 59% who did provide this information, approximately 76.1% were Caucasian, 15.2% were African American, and Asian and Latinos each comprised approximately 4.4% of the sample.

The SIB group in phase 1 was comprised of 26 males and 51 females. However, given that the majority of the participants were female it is important to consider whether

the proportion of females who injured themselves is different from the proportion of males who injured themselves. In order to test whether the SIB and Non-SIB groups differed significantly in terms of their gender composition, a Chi Square was conducted. Results indicate that the two groups did not differ significantly in terms of gender composition $x^2(4, N=412) = .19$, $p = .66$. Thus, while there were more females in the sample, the proportion of males in the SIB and Non-SIB groups was not significantly different.

Phase 2 measures and design.

After the first phase of data collection, data were entered into an SPSS database and all 77 individuals indicating that they had engaged in self-injury were re-contacted and invited to participate in further research. Self-injury was defined as having engaged in any of the behaviors listed in Table 1. Of these 77 individuals 44 agreed to take part in the second phase of data collection. A random sample of 77 non-injuring individuals were also re-contacted and invited to take part in additional research. Of these, 34 individuals agreed to take part. Researchers invited participants to take part in further research by calling them on the phone and reading a script describing the nature of the second half of data collection, thereby ensuring that all participants were provided with identical information prior to making their decision.

Results from an ANOVA indicate that of the 77 non-injuring participants who were invited to participate in phase ii of the research, those individuals who agreed were significantly older than those who declined further participation, $(1,77) = 7.5$, $p < .01$. The mean age of those who declined further participation was 18.5 years, whereas the mean age of those who agreed to participate was 20.2 years. A Chi Square indicated that no

significant differences existed between the groups in terms of gender composition $x^2(4, N=77) = .10$, $p = .75$. An additional Chi Square indicated that the groups did not differ in terms of whether they had experienced childhood sexual abuse $x^2(4, N=77) = 1.3$, $p = .26$.

A identical set of analyses were conducted to determine whether differences existed between those 44 self-injuring individuals who chose to participate in further research and the 33 self-injuring individuals who declined. Results from an ANOVA indicate that the groups did not differ significantly in terms of age $(1, 77) = 2.2$, $p = .14$. The mean age for those who chose to participate was 19.4 years and the mean age for those who declined was 18.3 years. Similarly, results from a Chi Square indicate that the groups did not differ in terms of gender composition, $x^2(4, N=77) = 1.9$, $p = .16$. An additional Chi Square indicated that the groups also do not differ in terms of whether the participants experienced childhood sexual abuse, $x^2(4, N=77) = 1.7$, $p = .20$.

Participants who agreed to participate in the second half of data collection scheduled individual one and a half-hour appointments with a graduate student researcher from this lab. At the start of each individual appointment, participants read and signed a consent form for the second phase of data collection.

Unlike the first phase of data collection that relied on self-report measures, the second phase relied more heavily on projective assessments. Participants completed one additional self-report measure, the Inventory of Interpersonal Problems-32 (Horowitz, Rosenberg, Uren & Villasenor, 1988), plus the Thematic Apperception Test (TAT) and the Rorschach.

The Inventory of Interpersonal Problems (IIP) -32 is a 32-item self-report instrument used to assess individual interpersonal style. The IIP assesses reliance on eight particular styles of interpersonal interaction. These eight domains are: domineering/controlling, vindictive/self-centered, cold/distant, socially inhibited, nonassertive, overly accommodating, self-sacrificing, and intrusive/needy. The eight domains are arranged to form a circumplex, with dominance/submission as the vertical axis and affiliation/isolation as the horizontal. The IIP-32 has been demonstrated to have extremely high test-retest reliability. Research has found test-retest reliability of .98 for the total score over a 10-week period (Horowitz, 1988). Additional research shows test-retest reliability to range from .71-.86 for each of the 8 subscales (Alden, Wiggins & Pincus, 1990).

The Rorschach was developed in 1921 by Hermann Rorschach and remains today the way he originally published it. The Rorschach is a clinician-rated projective test utilized to measure a variety of psychological domains including personality, psychopathology, interpersonal relationships, thought process, psychosis, global symptomatology and object-relational functioning. Research indicates that interrater reliability is excellent ranging from .82 to .97 (Meyer et al., 2002). Each Rorschach protocol was scored using Urist's (1977) MOA scale. Early research has demonstrated that the MOA has excellent construct validity. Specifically, Rorschach protocols of 40 inpatients scored using the MOA. MOA scores were found to correlate significantly with staff correlated significantly with hospital staffs' recordings of actual interpersonal behavior displayed by the patient on the ward (Urist, 1977). Additionally, the MOA correlated significantly with patient's written descriptions of important relationships in

their lives. Research conducted with both inpatient and outpatient adolescents indicates that the MOA is significantly correlated with ratings of object relational functioning based on information found in their psychiatric records (Urist & Shill, 1982). More recent research suggests that the MOA scale may be more accurately assessing severity of psychopathology and thought disorder rather than object relations (Blatt, Tuber, & Auerbach et al., 1990).

The standard protocol for administration of the Rorschach was employed (Exner, 2003), though protocols were scored using on the MOA scale and thus, only interrater reliability of the MOA was calculated. Two independent raters trained on the scale using the guidelines established by Urist in 1977 and 1982. For training purposes Rorschach protocols found in the "practice coding" section of Exner's (2003) workbook were scored for the MOA by each rater. Weekly meetings were held and discussions of inter-rater discrepancies took place. After eight weeks, the two raters, blind to the SIB status of each protocol independently scored a 25% sample of the Rorschach protocols. A one-way random effects model of inter-class correlation coefficients (ICCs) was utilized in calculating interrater agreement. Interrater reliability was high at .93.

The TAT is a projective test that yields information relevant to multiple aspects of human experience. For example, the TAT has been demonstrated to provide information concerning an individual's use of defense mechanisms (Cramer, 1991), gender identity (May, 1980), child abuse (Pistole & Ornduff, 1994), and object relations (Westen, 1995)

The TAT consists of a series of 31 cards with a printed picture on one side. For the purposes of this study, cards 1, 2, 3BM, 4 and 13MF were administered, in that sequence, to each participant. Like the administration of the Rorschach, the researcher

communicated with the participant using standardized instructions and remarks. The researcher handed the cards to the participant one by one and asked the participant to tell a story about each card that included details about what was happening now in the picture, what led up to it, how the story ends and what the people in the picture are thinking and feeling. If a participant failed to address one of these domains, the researcher prompted him or her to include the information. As the story was related, the researcher wrote the story, verbatim, asking the participant to slow down as needed in order to facilitate this process.

Interrater reliability

Given the subjective nature of both the MOA and the SCORS, steps were taken to ensure that adequate inter-rater reliability was achieved. Westen's (1995) Social Cognition and Object Relation Scale (SCORS) was utilized for assessing object relations using the TAT. Two fourth year graduate students served as independent raters and as such met and trained using the SCORS scoring manual (Hilsenroth et al., 2004). After ten weeks of training, two raters, blind to the SIB status of each protocol independently scored a 25% randomly selected sample of TAT protocols. A one-way random effects model of inter-class correlation coefficients was utilized in calculating interrater agreement across each of the 8 domains of object relational functioning assessed using the SCORS. Table 2 shows the level of reliability for each of the eight object-relational domains. ICC's in excess of .74 are thought to be reflective of excellent inter-rater agreement and scores ranging from .60 to .73 are thought to be good. Scores ranging from .40 to .59 are considered fair and scores below this range are thought to reflect poor interrater reliability (Fleiss, 1981). As shown in Table 2, raters demonstrated good to

excellent agreement in 7 out of 8 domains, and achieved fair reliability, .55, in the social causality domain. For the purposes of data analysis the scores of only the primary author were utilized.

SECTION 4

Results

Hypothesis #1.

In order to test the first hypothesis, that self-injurers evidence more disturbed object relational functioning as measured by the SCORS, a series of 3-way ANOVAs were conducted These ANOVAs tested whether a main effect existed for each of the 6 SCORS subscales, gender, and the interaction of gender and each subscale of the SCORS. Each participant produced five narratives, and each narrative was scored using the SCORS, thus yielding 6 scores, one for each of the six subscales for each narrative. Means were calculated for each of the subscales by obtaining an average score across the five narratives for each subscale. Three-way ANOVAs were conducted twice for each subscale, once to contrast the group of individuals who had never injured themselves with those individuals who had a lifetime history of self-injury, and once to contrast the group who were currently self-injuring with those who had never self-injured. A third set of 3-way ANOVAs was conducted as part of an exploratory analysis to determine if differences exist between the previously and currently self-injuring groups. Table 3 displays the mean SCORS scores for each group.

Results indicated that no significant differences between those individuals with a lifetime history of self-injury and those individuals with no such history existed for the COM subscale of the SCORS, $(1, 78) = 2.73$, $p = .10$. Additionally, no main effect was found for gender $(1,78) = .34$, $p = .56$, nor the interaction, $(1,78) = .33$, $p = .57$. Results comparing those individuals who are currently self-injuring versus those who have never self-injured nearly reach significance, $(1,50) = 3.86$, $p = .06$, although not in the predicted

direction. Results also indicated no significant main effect for gender (1, 50) = .16, p = .69 or the interaction, (1,50) .16, p = .69. Table 4 displays the results of the 3-way ANOVA comparing the group with a lifetime history of self-injury to the group with no history of self-injury. Table 5 displays the results of the 3-way ANOVA comparing only those individuals who are currently self-injuring with those individuals who have no history of self-injury.

Findings did not support the hypothesis that those individuals with a lifetime history of SIB would evidence lower scores than those individuals without a history of SIB for Affective Quality of Representations (1, 78) = .21, p = .65; nor were there significant differences in terms of gender, (1, 78) = 2.36, p = .13. Results of the 3-way ANOVA revealed no interaction effect for gender and self-injury (1, 78) = .31 p = .58. A second 3-way ANOVA comparing only those individuals who are currently injuring with those who reported never having self-injured revealed no main effect for self-injury (1,50) = .06, p = .81, or gender (1,50) = 3.15, p = .08. Results showed no significant interaction between these variables (1, 50) = .84, p = .36. Tables 6 and 7 display the results of the 3-way ANOVAs.

Similar results were found for Emotional Investment in Relationships. In a comparison of individuals with a lifetime history of self-injury versus individuals with no such history, no significant main effects were found for gender, (1, 178) = .00, p = .96, or self-injury (1, 78) = .03, p = .87. Similarly the interaction of gender and self-injury was nonsignfiicant (1, 78) = .80, p = .37. A second 3-way ANOVA was conducted comparing only those individuals who are currently injuring and those who have never injured, again there were no significant main effects for gender, (1, 50) = .13, p = .72, or

self-injury (1, 50) = .14, p = .71. In addition, no interaction effect was found between gender and self-injury (1, 50) = 1.07, p = .31. Tables 8 and 9 display the results of the ANOVAs.

For Aggression, the main effects for gender (1,78) = .36, p = .55, and self-injury (1, 78) = .01, p = .93; were non-significant in a 3-way ANOVA for individuals with a lifetime history of self-injury and those individuals with no such history. In addition, the interaction of gender and self-injury was non significant, (1, 78) = .15, p = .70. When comparing only those individuals who are currently injuring and those with no history of self-injury, however, the main effect for gender was significant, with the mean score for males being 3.82 and the mean score for females being 3.64., (1, 50) = 4.85, p = .03. The main effect for self-injury was nonsignificant (1, 50) = .11, p = .75. In addition, results of the ANOVA indicated a significant interaction between gender and self-injury (1, 50) = 4.15, p = .05. An investigation of the means indicates that for females, self-injury was associated with lower, or more pathological scores on the Aggression subscale of the SCORS, whereas for males, self-injury was associated with higher, or healthier scores on Aggression. Tables 10 and 11 display the results of the ANOVAs. See Table 12 for a display of the means by gender.

For Self-Esteem, a 3-way ANOVA comparing individuals with and without a lifetime history of self-injury indicated nonsignificant main effects for gender (1, 78) = 1.45, p = .23, and self-injury (1,78) = .94, p = .34. Additionally, results indicated that the interaction was nonsignificant (1,78) = .34, p = .56. An additional 3-way ANOVA comparing only those individuals who are currently self-injuring to those with no history of self-injury revealed similar findings. The main effects for both gender, (1, 50) = 2.39,

p = .13, and self-injury (1,50) = .92, p = .34, were nonsignficant, as well as the test of the interaction, (1, 50) = 1.18, p = .28. Tables 13 and 14 display the results of the ANOVAs.

For the final SCORS variable, Identity, a 3-way ANOVA comparing individuals with and without a lifetime history of self-injury indicated nonsignificant main effects for both gender (1, 78) = 1.94, p = .17, and self-injury (1,78) = .09, p = .76. In addition, the test of the interaction was nonsignificant, (1,78) = .01, p = .91. Similar results were found for a second 3-way ANOVA comparing the currently versus never-injuring groups. The main effects for both gender, (1, 50) = 2.94, p = .09, and self-injury (1,50) = .07, p = .79, were nonsignficant. Additionally, a test of the interaction was also nonsignificant (1,50) = .28, p = .60. Tables 15 and 16 display the results of the ANOVAs.

Hypothesis #2.

To test of the second hypothesis, that the self-injuring group would evidence significantly higher MOA PATH scores than the non-injuring group, two 3-way ANOVAs were conducted. The first ANOVA compared the MOA PATH scores across gender and lifetime history of self-injury. Results indicated a nonsignificant main effect for gender (1, 78) = 3.65, p = .06, however the main effect for self-injury was significant, (1, 78) = 6.68, p = .01. The mean MOA PATH score for individuals with no history of self-injury was significantly less pathological at 16.68, as compared to the mean score for those individuals with a lifetime history of self-injury, 22.77. Analysis revealed that the interaction of gender and self-injury was nonsignficant (1, 78) = 2.45, p = .12.

Results from the second 3-way ANOVA comparing only those individuals who are currently injuring and those with no history of self-injury are even more striking. Analysis revealed significant main effects for both gender (1, 50) = 8.54, p = .005, and

self-injury (1, 50) = 4.33, p = .04. A test of the interaction was also significant (1, 50) = 6.95, p = .01. Tables 18 and 19 display the results of these 3-way ANOVAs. An investigation of the means, displayed in Table 17, indicates that for females, self-injury was associated with lower, or less pathological scores on the MOA PATH, whereas for males, self-injury was associated with much higher, more pathological scores on the MOA PATH. In addition, males, overall, scored significantly higher than females on the MOA PATH regardless of whether they are self-injuring or not.

Hypothesis #3

The third hypotheses predicted that total scores on the IIP-32 would be higher for the self-injuring group, and results support this hypothesis. Results from a one-way ANOVA indicate that the group with a lifetime history of self-injury evidenced significantly more global interpersonal problems as indicated by the IIP-32, than did the group with no history of self-injury, (1, 78) = 19.3, p<.001.

Hypothesis #4

The fourth hypothesis predicted that individuals with a lifetime history of self-injury would evidence significantly higher scores on the Neediness, Self-Sacrifice, Non-Assertion, and Over-Accommodation subscales of the IIP-32. Results support this hypothesis. Four ANOVA comparisons of means indicated that he self-injuring group showed significantly higher levels of Neediness F(1,78) = 4.0, p =.05, Self-Sacrifice F(1,78) = 35.7, p = .02, Non-Assertion F(1, 78) = 17.8, p<.001 and Over-Accommodation F(1,78) = 10.2, p<.002. See Table 20 for means. When comparing those individuals who are currently self-injuring with those who have no history of self-injury, all mean comparisons were significant at p <.05, with the currently injuring group

showing greater overall symptomology, less self-assertion, and greater over-accommodation self-sacrifice and neediness. See table 21 for means.

Hypothesis #5

Lastly, a review of the literature suggests that experiences of childhood physical and sexual abuse are common among self-injurers. A chi square comparing the incidence of physical and sexual abuse between those individuals with a lifetime history of self-injury and those with no such history indicates that those individuals with a history of self-injury were significantly more likely to have experienced physical or sexual abuse, $x^2(1, N= 78) = 6.2, p =.01$ Findings from the data provide additional support for the theory that experiences of childhood abuse are a risk factor for the development of self-injurious behavior.

In order to test the hypothesis that object relational functioning would account for a significant portion of the variance in self-injury after the variance explained by child abuse was taken into account, we conducted two regression analyses were conducted. Self-injury was transformed into a continuous variable that indicates the number of times an individual had injured themselves. The values of self-injury ranged from 0 to 51. Child abuse and global symptomology from SCL-90-R were first entered into the regression equation, followed by MOAPATH. A second regression was conducted in which child abuse was again entered first, followed by the SCORS complexity of representations variable, as this was the only SCORS variable that was related to SIB.

The first regression analysis revealed that child abuse was a significant predictor of self-injury, accounting for approximately 7% of the variance. Though object relational functioning as measured by the MOA accounted for an additional portion of the variance,

the R2 change was small, .03, and non significant. The results of the second regression were similar, indicating that the SCORS variable COM accounted for a nonsignificant portion of the variance in self-injury after child abuse was taken into account. Table 22 displays the results of these regression analyses.

Post-hoc analysis

Given that the findings regarding gender composition of the original SIB and NonSIB groups are in contrast with much published research regarding gender and self-injury, a post-hoc descriptive analysis of self-injury and gender was conducted. Table 23 shows the percentage of females and males who engaged in each type of self-injury surveyed. Column totals are not equal to group sample size because 50% of the respondents indicated they engaged in multiple forms of SIB. A series of Chi Squares were conducted to determine if each method of self-injury differed according to gender. Results indicated that females engaged in significantly more wrist cutting $x^2(4, N=77) = 4.2$, $p = .04$. Males engaged in significantly more self-punching than females, $x^2(4, N=77) = 11.8$, $p = .001$, and females exhibited significantly more trichotillomania than males, $x^2(4, N=77) = 5.2$, $p = .02$. Rates of self-burning trended towards higher rates among males, $x^2(4, N=77) = 3.0$, $p = .08$

In addition this study explored whether those individuals who were no longer actively self-injuring scored similarly to those individuals who have no history of self-injury on the SCORS, MOA and IIP-32 all ANOVAS were repeated to compare the means between these groups. Table 24. Results indicate that despite no longer engaging in self-injury, those individuals who engaged in self-injury in the past differed significantly in terms of interpersonal difficulties as evidenced by higher average total

scores on the IIP-32 (1,78) = 11.6, p = .001. In addition, recovered self-injurers continued to show markedly less assertive behavior than did their never injuring counterparts, (1, 78) = 13.6, p =.001. Results also indicate more disturbed object relational functioning as measured by the MOA PATH scale among self-injurers (1,78) = 5.6, p = .02.

SECTION 5

Discussion

In sum, the findings of this study partially support the hypotheses. The first hypothesis stated that self-injurers would evidence more pathological object relational functioning as evidenced by lower scores on the COM, AFF, EIR, AGG, SE, and ID subscales of the SCORS. Results indicated that no significant differences were found for the COM, AFF, EIR, SE, or ID subscales when comparing individuals with a lifetime history of self-injury and those with no history of self-injury, nor were any significant differences across these variables found when comparing only those individuals who are currently injuring to those with who had never self-injured. Only one variable of the SCORS, Aggression (AGG) showed significant differences. Specifically, when comparing current self-injurers to individuals with no such history, males had slightly, but significantly healthier mean scores than did females. In addition, there was a significant interaction effect between gender and self-injury, whereby the mean AGG score for males who were currently self-injuring was healthier than the mean AGG score for males with no history of self-injury; however the opposite pattern appeared for females, with self-injury being associated with more pathological mean AGG scores and no history of self-injury being associated with healthier mean AGG scores.

Analysis of the second hypothesis, that individuals with a history of self-injury would evidence higher MOA PATH scores was supported. Those individuals with a lifetime history of self-injury evidenced higher, or more pathological MOA PATH scores than did their non-injuring counterparts. Additionally, currently injuring males evidenced

higher MOA PATH scores than did never-injuring males, however currently injuring females evidenced lower, healthier MOA PATH scores than did never-injuring females.

The findings related to the MOA PATH score indicate that, in general college-age males tend to harbor greater expectations of hostile control and aggression from others and that among self-injuring men, these expectations appear even more pronounced. The association of highly pathological scores on the MOA and self-injury among men are not accompanied by similar pathological scores among other aspects of object relational functioning such as Self-Esteem, or Complexity of Representations. Future research should investigate the types of experiences males may be more likely to experience that are consistent with the development of relatively pathological expectations of aggression while other dimensions of object relational functioning remain unimpaired.

The relationship between self-injury and MOA PATH scores among women was opposite that of the men. For women, self-injury was associated with slightly healthier MOA PATH scores, indicating that self-injury might somehow be mitigating the expression of pathological object relational functioning.

One possible explanation for the differences seen across gender for the MOA PATH score, is that the MOA PATH and AGG measure different aspects of object-relational functioning associated with aggression. The MOA score assesses fear of enmeshment with others and the loss of self, and also, expectations of hostile interactions with others. In contrast the AGG scale of the SCORS measures ones ability to manage one's own aggressive impulses effectively. In light of these differences, the results suggest that for women, self-injury is associated with impaired ability to manage one's

own aggressive impulses, while lack of self-injury is associated with having hostile expectations of others and fear of loosing one's sense of self and separateness.
The finding that women who self-injure have difficulty managing their own aggressive impulses is not surprising, given that self-injury is a physical manifestation of an aggressive impulse. In addition, research suggests that self-injury may aid people in ending feelings of unreality and help them to distinguish between self and other (Suyemoto, 1998). Perhaps the self-injuring group of women showed healthier MOA PATH scores because their self-injury allowed them to gain some control over fear of loss of separateness and aggressive actions from others.

Among men, self-injury was associated with healthier scores on the AGG, or greater ability to control aggressive impulses. Conversely self-injury was associated with higher MOA PATH scores or greater fears of enmeshment and loss of self and expectations of hostile actions from others. Perhaps the findings that no history of self-injury was related to greater difficulty controlling aggressive impulses (more pathological AGG scores) is simply reflective of a societal expectation that males should be somewhat aggressive. Perhaps the "pathology" demonstrated by non-injuring males reflects the normative male score for AGG, whereas males who self-injure direct their hostile impulses towards themselves, thereby enabling them to gain more control over other types of aggressive impulses and thus obtain less pathological scores on the AGG variable of the SCORS.

Unlike females, men who self-injured showed a drastically more pathological scores on the MOA PATH than did men with no history of self-injury. Given the large difference in average scores between the groups of men and between the sexes, it appears

that self-injury among men should be interpreted as a potent red flag that these men are struggling with expectations that others will behave in aggressive and hostile ways and that they are in danger of loosing their sense of self. While self-injury may be helping women to overcome such fears, this is clearly not the case for men.

Thus, a pattern appeared in the findings. Only those dimensions of object relational functioning that dealt with aggressive and hostile affect, AGG and MOA PATH, were significantly associated with self-injury although the nature of the association differed among men and women. Future research should investigate whether discreet aspects of aggression are differentially associated with self-injury across gender.

Data analysis did support the third hypothesis, that the group with a history of self-injury would evidence higher total IIP-32 scores as well as the fourth hypothesis, that the subscales, Neediness, Self-Sacrifice, Non-Assertion, and Over-Accommodation would be significantly higher among the group with a history of self-injury. Results did not support the fifth hypothesis, that scores on the MOA and SCORS would account for significantly more variance in self-injury after global symptomlogy on the SCL-90-R and childhood abuse were accounted for.

While object-relations theory posits that experiences of childhood abuse may derail the optimal maturational trajectory of internal object representations, the findings of this study suggest that the object relational functioning among self-injurers enrolled in college may be relatively unimpaired. These findings are surprising given that experiences of childhood abuse significantly predicted self-injurious behavior for this sample. While the self-injurious behavior itself may be shocking, those individuals who are attending college may represent a relatively high functioning cohort of self-injurers.

Previous studies investigating the object relational functioning of self-mutilating individuals have been conducted using inpatient samples that are likely manifesting a higher degree of pathology than a non-clinical college sample.

Another possible explanation for the relatively unimpaired object relational functioning among the self-injuring participants may be previous experience with therapy, though individuals were not asked to indicate if they had ever sought mental health services. Future research investigating object relational functioning should take this factor into account.

In addition, volunteer bias may have some implications for the interpretation of these findings. It should be noted that only approximately 57% of the self-injurers and 44% of the non-injurers agreed to participate in phase 2 of the study. One can speculate that those individuals who volunteered to take part in the research may not be a representative sample of self-injurers or non-injurers in a more general sense. Perhaps those individuals who volunteered to take part have characteristics in common that make it difficult to infer whether differences in a more representative sample exist. One such characteristic is the possibility that those individuals who volunteered are more psychologically healthy or stable individuals than those individuals who declined to take part in the research.

Additional findings from the IIP-32 indicate that individuals with a history of self-injury may be acting in a relatively non-assertive manner, often putting the needs of others before their own. Previous studies also suggest that self-injurers appear particularly sensitive to interpersonal loss and rejection and that incidents of SIB escalate in response to real or perceived loss and rejection. Perhaps the self-injurers in this sample

were similarly sensitive to interpersonal rejection and have adopted a style of social interaction whereby they behave in a subservient manner to reduce the likelihood of experiencing disapproval or rejection. These findings offer some support for Winnicott's theory of false self.

The findings from this study also call attention to the large proportion of college students who may be struggling with self-injury. Nearly one in five students from our sample indicated a history of self-injury. Such high rates make it essential that clinicians counseling college students should carefully screen for self-injury in each client, not just those individuals who appear to have risk factors for self-injury such as a history of sexual abuse or dissociative tendencies. Additionally, the results of this study indicate that both males and females engage in self-harming behavior and clinicians should take care to screen for self-injury in both sexes.

In order to assist clinicians in the screening process, intake forms might be adapted so that students are provided with a list of self-injurious behaviors and asked to indicate whether or not they have engaged in such behaviors. The results of this study suggest that students engage in a wide variety of self-harming behaviors and thus a quick screening question that asks only about cutting or burning oneself will not suffice. When inquiring about the presence of self-injury, mental health professionals should ask about less obvious behaviors such as self-hitting and trichotillomania as well.

Clinicians should not loose sight of the possible stigmas associated with self-injurious behaviors and should not limit screening for self-injurious behaviors to the intake appointment. Some clients may not feel comfortable disclosing such behaviors to a clinician with whom they are just beginning to build a rapport, and thus some clients

might not disclose these behaviors until later in treatment. Perhaps one of the most important steps in both addressing self-injury as well as encouraging disclosure of such behaviors is building a safe therapeutic space with one's client. A safe therapeutic environment might enable those individuals who typically hide their self-injury from others to talk about these behaviors with another for the first time.

Given the research suggesting that self-injury is a mode of affect regulation (Yates, 2003), clinicians may choose to explore the emotions experienced by a client prior to an episode of self-injury. White et al. (2002) suggest having clients note the events that trigger self-injury and their emotional reactions to such events. Through this process clients could gain insight about when they might be more vulnerable to self-injury and can gradually replace self-injurious behaviors with new coping mechanisms learned in therapy.

Additionally, clinicians could easily conduct a time-series analysis whereby clients complete daily measures related to stressful events or emotions, and whether or not they self-injured. The measurements can be graphed and statistically analyzed so that both the clinician and client can see the relationship between triggering events and self-injury over time. This type of graphical demonstration may serve to help clients become more aware of their behavioral and emotional patterns early in therapy, as well as allow them to see change in their symptoms as treatment progresses.

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APPENDIX

Table 1

Questions Assessing Self-Injury

Stem	Specific Question
At some time in my life, I have deliberately:	1. Scratched or cut my wrists 2. Cut other areas of my body 3. Carved words or symbols on my skin 4. Burned my skin 5. Pulled out large amounts of hair 6. Scratched myself severely 7. Stuck myself with pins needles, etc. 8. Broken my bones 9. Infected myself 10. Punched my own face hard 11. Tricked doctors into operations or procedures 12. Other _____

Table 2

Itraclass Correlation Coefficients (ICC) for the SCORS

Category	ICC
Complexity of representations	.68
Affective quality of representations	.84
Emotional investment in relationships	.80
Emotional investment in morality	.78
Social Causality	.55
Aggression	.76
Self-esteem	.77
Identity	.75

Table 3

Mean scores for total sample for the 6 domains assessed using the SCORS

	Com	Aff	Eir	Ag	Se	Id
Lifetime SIB group	4.6	3.3	3.6	3.7	3.6	4.4
Current SIB group	4.6	3.4	3.6	3.6	3.6	4.3
Recovered group	4.5	3.4	3.7	3.7	3.7	4.4
Never SIB group	4.2	3.5	3.6	3.7	3.8	4.3

Table 4

ANOVA results for COM and lifetime history vs no history of self-injury

Source	Df	F	p
Sex	1	.34	.56
Self-injury	1	2.73	.04
Sex * Self-injury	1	.33	.57

Table 5

ANOVA results for COM and currently-injuring vs no history of self-injury

Source	Df	F	p
Sex	1	.16	.69
Self-injury	1	2.86	.06
Sex * Self-injury	1	.16	.69

Table 6

ANOVA results for AFF and lifetime history vs no history of self-injury

Source	Df	F	p
Sex	1	2.36	.13
Self-injury	1	.21	.65
Sex * Self-injury	1	.31	.58

Table 7

ANOVA results for AFF and currently-injuring vs no history of self-injury

Source	Df	F	p
Sex	1	3.15	.08
Self-injury	1	.06	.81
Sex * Self-injury	1	.84	.36

Table 8

ANOVA reults for EIR and lifetime history vs no history of self-injury

Source	Df	F	p
Sex	1	.00	.95
Self-injury	1	.03	.87
Sex * Self-injury	1	.80	.37

Table 9

ANOVA results for EIR and currently-injuring vs no history of self-injury

Source	Df	F	p
Sex	1	.13	.72
Self-injury	1	.14	.71
Sex * Self-injury	1	1.10	.31

Table 10

ANOVA reults for AGG and lifetime history vs no history of self-injury

Source	Df	F	p
Sex	1	.36	.55
Self-injury	1	.00	.93
Sex * Self-injury	1	.15	.70

Table 11

ANOVA results for AGG and currently-injuring vs no history of self-injury

Source	Df	F	p
Sex	1	4.90	.03
Self-injury	1	.11	.75
Sex * Self-injury	1	4.15	.05

Table 12

Mean scores by group and gender

	Male						Female					
	Com	Aff	Eir	Ag	Se	Id	Com	Aff	Eir	Ag	Se	Id
Lifetime SIB	4.42	3.60	3.57	3.78	3.80	4.52	4.60	3.29	3.71	3.69	3.58	4.34
Current SIB	4.53	3.70	3.72	3.97	3.87	4.53	4.53	3.24	3.72	3.44	3.44	4.18
Recovered	4.30	3.50	3.67	3.60	3.73	4.50	4.30	3.31	3.70	3.80	3.65	4.44
Never SIB	4.25	3.58	3.72	3.77	3.85	4.49	4.25	3.44	3.60	3.73	3.77	4.30

Table 13

ANOVA results for SE and lifetime history vs no history of self-injury

Source	Df	F	p
Sex	1	1.45	.23
Self-injury	1	.94	.34
Sex * Self-injury	1	.34	.56

Table 14

ANOVA results for SE and currently-injuring vs no history of self-injury

Source	Df	F	p
Sex	1	2.39	.13
Self-injury	1	.92	.34
Sex * Self-injury	1	1.18	.28

Table 15

ANOVA results for ID and lifetime history vs no history of self-injury

Source	Df	F	p
Sex	1	1.94	.17
Self-injury	1	.09	.76
Sex * Self-injury	1	.01	.91

Table 16

ANOVA results for SE and currently-injuring vs no history of self-injury

Source	Df	F	p
Sex	1	2.94	.09
Self-injury	1	.07	.79
Sex * Self-injury	1	.28	.60

Table 17

Mean scores on the MOA PATH among male, female and combined groups

	Total Sample	Males	Females
LifeSIB	22.8	31.17	19.63
NeverSIB	16.7	17.38	16.24
Current	22.4	36.33	14.0
Recovered	23.00	26.00	22.18

Table 18

MOA PATH ANOVA for lifetime vs. no-history of self-injury

Source	Df	F	p
Sex	1	3.6	.06
Self-injury	1	6.7	.01
Sex * Self-injury	1	2.4	.12

Table 19

MOA PATH ANOVA for currently-injuring vs. no-history of self-injury

Source	Df	F	p
Sex	1	8.54	.005
Self-injury	1	4.33	.04
Sex * Self-injury	1	6.95	.01

Table 20

Means on IIP-32 for lifetime and never SIB groups

	Non-Assertive	Overly-Accommodating	Self-Sacrificing	Needy	Total
Lifetime SIB	6.7	7.4	6.8	4.5	39.7
Never SIB	3.8	4.8	5.0	3.0	25.3
Difference	2.9***	2.6**	1.8*	1.5*	14.4***

* p <.05
**p < .01
*** p <.001

Table 21

IIP-32 means for currently and never self-injuring groups

	Unassertive	Overly Accommodating	Self-Sacrificing	Needy	Total
Current SIB	7.5	8.4	7.3	4.8	45.3
Never SIB	3.8	4.8	4.9	3.0	25.3
Difference	3.7**	3.6**	2.4*	1.8*	20.0**

* $p < .05$
** $p < .001$

Table 22

Regression Analyses of MOA and COM Variables on Self-Injury

Regression	Step	Variables	df	B	F	R^2	$R^2_{\triangle}$
p 1	1	Childabuse/SCL-90-R	1	7.4	6.0	.07	.07*
	2	Child abuse/SCL-90-R		1	7.3	2.0	.10
		MOA PATH	1	.3			
2	1	Childabuse/SCL-90-R	1	7.4	6.0	.07	.07*
	2	Childabuse/SCL-90-R	1	6.5	3.5	.09	.02
		COM	1	1.7			

* $p < .01$

Table 23

Gender Differences in Method of Self-Injury

Method of SIB	% of Females	% of Males
Cut wrists	46	23*
Cut other parts of body	31	23
Carved words/symbols	23	23
Burned oneself	13	31
Pulled out large amounts of hair	17	4*
Scratched oneself severely	25	15
Stuck oneself with pins/needles	15	12
Broken bones	2	0
Infected oneself	2	0
Punched face hard	13	54**
Tricked doctors into procedures	2	4
Other	6	8

* $p<.05$

** $p<.01$

Table 24

Means for no-longer and never injuring groups

	Recovered	Never	Difference
COM	4.5	4	.5
AFF	3.3	3.5	.2
EIR	3.7	3.6	.1
AG	3.8	3.7	.1
SE	3.7	3.8	.1
ID	4.4	4.4	0
MOA PATH	23.4	16.7	6.7*
IIP-32-1	6.3	3.8	2.5***
IIP-32-2	7.0	4.8	2.2**
IIP-32-3	6.5	4.9	1.6
IIP-32-4	4.5	3.0	1.5
IIP32-5	37.2	25.3	6.9***

Note. Com = SCORS complexity of representations; Aff = SCORS affective quality of representations; Eir = SCORS emotional investment in relationships; Agg = SCORS aggression; Se = SCORS self-esteem; Id = SCORS identity and coherence of self; IIP-1 = Nonassertiveness: IIP-2 = over-acommodation; IIP-3 = self-sacrificing; IIP-4 = neediness; IIP-5 = total symptomology on the IIP-32.

* $p < .05$

** $p < .01$

*** $p < .001$

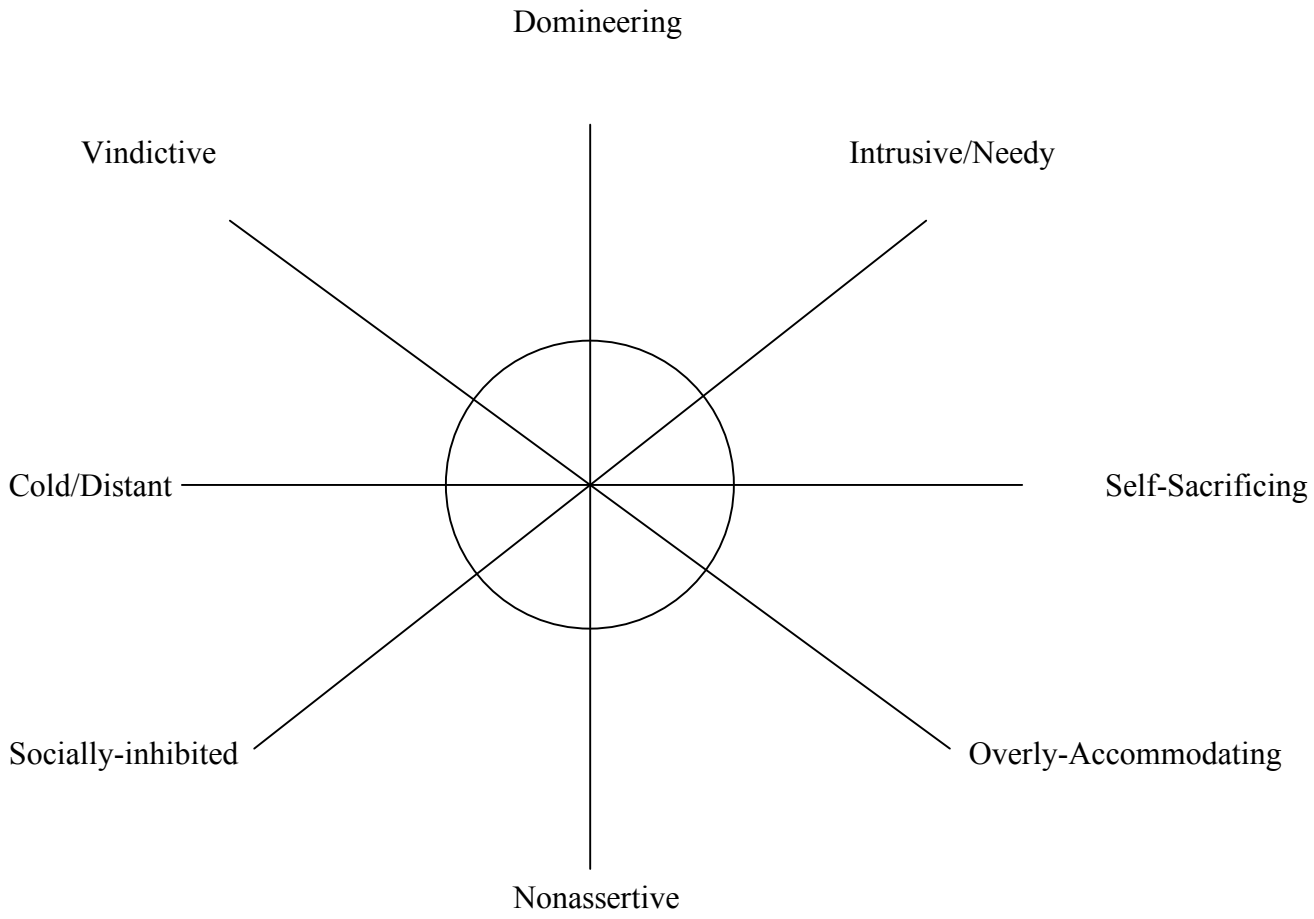

Figure 1

Circumplex model of the IIP-32

VITA

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