Sense of Coherence: The Relationship to Personal Growth and Distress after a Breakup

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SENSE OF COHERENCE: THE RELATIONSHIP TO PERSONAL GROWTH AND DISTRESS AFTER A BREAKUP

by

Kristin R. Gillen

A Dissertation Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Philosophy Department of Counselor Education and Counseling Psychology Advisor: Kelly McDonnell, Ph.D.

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SENSE OF COHERENCE: THE RELATIONSHIP TO PERSONAL GROWTH AND DISTRESS AFTER A BREAKUP

Kristin R. Gillen, Ph.D.

Western Michigan University, 2011

Romantic relationship issues are among the most common presenting concerns in university counseling center settings (Benton, Robertson, Tseng, Newton, & Benton, 2003; McCarthy, Lambert, & Brack, 1997). Specifically, romantic relationship breakups have received attention in the literature, as these particular losses tend to generate a myriad of emotions for college students. While numerous studies have explored distress reported after a breakup, few studies have focused on the personal growth individuals could potentially gain after experiencing a breakup (Tashiro & Frazier, 2003). The current study explores both the distress as well as personal growth individuals endorsed subsequent to a breakup.

Since relationship breakups appear to be a salient issue for young adults, it seems important to consider resources that might enable individuals enduring breakups to cope more effectively with their loss. One general resilience resource identified in the literature is Sense of Coherence (SOC) (Antonovsky, 1987), which consists of three components: comprehensibility, manageability, and meaningfulness. Since SOC had not previously been investigated in relationship to personal growth and distress reported after a relationship breakup, the current study endeavors to explore these relationships.
Participants included 150 college students from a large Midwestern university who had experienced a relationship breakup within the past 2 years. Participants completed measures assessing sense of coherence, personal growth, and distress as well as a demographic information questionnaire. Results indicated significant correlational relationships between SOC and personal growth and SOC and distress. Additionally, canonical correlation analysis revealed that participants endorsing a greater sense of coherence and a longer timeline since the breakup occurred, tended to report having more personal growth and less distress. Finally hierarchical regression analyses indicated that the meaningfulness subscale of SOC did not offer a statistically significant contribution above and beyond the other predictor subscales of comprehensibility and manageability in explaining personal growth and in explaining distress post-breakup. Interestingly, the manageability scale emerged as a significant and unique predictor of distress when considered with meaningfulness and comprehensibility. Findings and implications for the mental health field are discussed. Also included are limitations and recommendations for future research.
ACKNOWLEDGMENTS

“Hearts will never be practical until they can be made unbreakable”

L. Frank Baum

Perhaps one of the most significant losses that test the capacity of the human heart involves the dissolution of a romantic relationship. This dissertation is dedicated to all of those individuals who have endured heartache and discovered newfound resilience and personal growth after a relationship breakup.

I would like to start by thanking friends, family, colleagues, and even random strangers who, upon hearing my dissertation topic, launched into a “breakup story” of their own. These stories have not only been quite interesting, but they have also helped guide and inform my dissertation topic. Additionally, I would like to express my appreciation for the clients I have worked with over the years who have shared their breakup experiences and have allowed me to participate in their emotional journey after a relationship breakup. Thank you for your candidness, insightfulness, and resilience.

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With Sincere Gratitude,
Kristin Rae Gillen
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CHAPTER I
INTRODUCTION

Loss is an inherent and inescapable reality of human existence that individuals encounter, often multiple times, throughout their lives. Thus, few individuals can evade the myriad of losses life situations present. Whether these losses are anticipated, unexpected, desirable, devastating, recognized, or disenfranchised, losses will invariably occur. While people lose material possessions, money, and jobs perhaps the most emotionally laden losses encompass those that are interpersonal in nature. Because the cultivation and maintenance of relationships are such integral components of human existence, the termination of a romantic relationship can evoke strong feelings of emotional distress (Battaglia, Richard, Datteri, & Lord, 1998; Davis, Shaver, & Vernon, 2003; Fine & Sacher, 1997; Frazier & Cook, 1993; Moller, Fouladi, McCarthy, & Hatch, 2003; Robak & Weitzman, 1998; Sbarra, 2006; Sbarra & Emery, 2005; Sbarra & Ferrer, 2006; Sprecher, 1994; Wang & Amato, 2000). One type of interpersonal loss that may be particularly stressful for individuals is the loss of a nonmarital romantic relationship.

Nonmarital Romantic Relationship Loss

A particularly heart-wrenching loss involves relationship breakups. Perhaps Lebanese-American poet Kahlil Gibran captured the experience of romantic relationship dissolutions best when he wrote “And ever has it been that love knows not its own depth until the hour of separation” (1996, p. 4). This quote seems particularly applicable to breakups, as these types of losses can generate a host of strong emotions when individuals realize that the relationship with their loved one has ended. The contemporary vernacular of “getting dumped” is used to describe breakups for a reason. The term “getting dumped” typically conveys a sense of abandonment and rejection; thus
individuals may experience this type of loss quite keenly. It is difficult to find someone who is not familiar with this experience either personally or vicariously. In support of the pervasiveness of breakups in society, a multitude of love songs exist detailing the impact of a breakup on a forlorn partner, endless self-help books offering coping tips for jilted partners make their way onto bookshelves, and a plethora of movies reflecting the end of a romance remind individuals of how integral the search for a lasting romantic partnership is and the impact of having this goal thwarted by a breakup.

Since the dissolution of a nonmarital romantic relationship can be a significant emotionally taxing experience for the individuals involved, research exploring these losses warrants attention. According to research, the grief associated with this type of loss may be rather complicated, as nonmarital interpersonal losses may not be formally recognized like those losses that dissolve as a result of a divorce (Martin, 2002). Whereas divorce requires a recognized decree of the relationship termination, nonmarital relationship losses often do not afford opportunities for recognized closure that might validate grievers’ significant interpersonal loss. Consequently, individuals experiencing a nonmarital breakup may not be extended opportunities to grieve that are commensurate with their loss. When others fail to recognize the griever’s loss, the adjustment process may be impeded (Thornton, Robertson, & Mlecko, 1991). As a result, individuals grieving this loss may not feel validated in their emotional responses to the relationship termination and, subsequently, may feel that their respective grieving has been thwarted and disenfranchised. Doka (1989) defined the concept of disenfranchised grief as grief “in which a person experiences a sense of loss but does not have a socially recognized right, role, or capacity to grieve” (p. 3). Thus, disenfranchised grief does not often afford
an opportunity for individuals to have their grieving openly recognized or sanctioned by others.

Robak and Weitzman (1994-95) noted that the grieving associated with relationship breakups in young adults constitutes an example of disenfranchised grief, whereby individuals do not feel as though their grief has been accurately recognized or sanctioned by others. Kaczmarek and Backlund (1991) offer additional support regarding the challenges inherent in older adolescent relationship breakups, stating that many nonmarital relationships are not deemed as serious as the relationships of older adults. Thus, when these relationships dissolve, many individuals may feel marginalized in their grief. In spite of affected persons’ apparent grief, significant others may dismiss the devastation that brokenhearted individuals endure. It seems that with disenfranchised grief in young adulthood, support systems do not conceptualize grief of the brokenhearted as stemming from a significantly stressful event; therefore, appropriate support and intervention is lacking. Thus, individuals may receive the message that their grief does not merit attention. As a result, they may minimize their own grief and not seek out the support from which they might benefit.

This lack of formal recognition seems concerning, as the dissolution of a romantic relationship can result in grieving that parallels the intensity of grief found in death-related loss (LaGrand, 1985), yet may not be acknowledged accordingly. It is interesting to note that non-death relationship losses, such as romantic relationship breakups, involve a greater sense of perceived control and preventability (Martin, 2002). This contention implies that terminating an intimate relationship involves a certain degree of choice and responsibility; therefore, it seems likely that nonmarital relationship losses may engender feelings of distress as well as a deeper sense of personalization for the loss experienced.
Accordingly, Martin noted that non-death related interpersonal losses are more likely to impact the griever’s self-esteem due to the perceived preventability as well as constant reminders that the relationship failed to last. It seems likely that this sense of personal accountability as well as beliefs about “failure” at maintaining the relationship creates distress for those individuals enduring a breakup. These relationship dissolutions may be particularly difficult for individuals who are the recipients rather than initiators of the breakup (Frazier & Cook, 1993). For instance, individuals not responsible for initiating the breakup were inclined to report more distress in comparison to initiators (Sprecher, 1994; Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998). Thus, non-initiators may perceive the breakup as less controllable. This is important to note, as perceptions about controllability of the breakup have been associated with greater distress post-breakup (Frazier & Cook, 1993; Peterson, Rosenbaum, & Conn, 1985). Although distress is common for most individuals after a breakup, young adults may experience these relationship dissolutions as particularly stressful.

Relevance to College Students

Romantic relationship issues are among the most common presenting concerns in university counseling center settings (Benton, Robertson, Tseng, Newton, & Benton, 2003; McCarthy et al., 1997). As such, developing a greater understanding of college students’ romantic relationships and breakups warrants scholarly attention. It is imperative that professionals working with college students develop an understanding regarding the various ways in which relationship breakups impact students.

Emotional Impact of Relationship Breakups

Despite the perception that nonmarital breakups in young adulthood are less serious, the resulting emotions these individuals experience may be quite intense and
overwhelming. In support, numerous studies have underscored the importance of exploring the various difficult emotions young adults typically experience after a romantic relationship dissolution (Choo, Levine, & Hatfield, 1996; Fine & Sacher, 1997; Frazier & Cook, 1993; Helgeson, 1994a; Helgeson, 1994b; Kaczmarenk, Backlund, & Biemer, 1990; McCarthy et al., 1997; Simpson, 1987; Sprecher et al., 1998).

LaGrand (1989) identified romantic relationship breakups in young adulthood (ages 17-24) as having the potential for grieving, noting “support systems, consisting of family members and sometimes friends, react to the breakup as merely a part of growing up, thereby minimizing the meaning of the loss to the griever” (p. 176). Although relationship breakups may create a host of challenges for the young adult population, college students’ romantic breakups may be particularly stressful.

The college environment may present individuals with a myriad of unique challenges that they may not have previously experienced, such as beginning to deal with significant loss and adjustment. The transition to college can be a daunting endeavor for many individuals. Negotiating the challenges of leaving home, leaving friends, and essentially leaving familiarity behind can be a difficult adjustment for students to undertake. Although loss and the resultant grief are pervasive facets of human experience, college students may be at risk for exacerbated grief following a romantic relationship dissolution. Specifically, Robak and Weitzman (1994-95) investigated how college students may feel disenfranchised in their grief. They found that their post-breakup grief is often attended to by friends and self but may go unnoticed by parents and siblings. Furthermore, results indicated that the grief associated with relationship losses in college students was comparable to the grief experienced in death-related losses.
In a similar vein, negotiating challenging emotions appears to be prevalent among college students experiencing a breakup. Sbarra and Ferrer (2006) explored the emotional reactions of undergraduates who had recently ended romantic relationships and found that love and longing for the partner, sadness, and anger were common emotional responses to romantic relationship dissolutions. Kaczmarek et al. (1990) explored the grief reactions of college students after a breakup and found parallels with death-related grief in that the level of depression was linked to: the suddenness with which the relationship ended, perceptions of relationship closeness, and the duration of the relationship. In regards to depressed mood, studies have indicated a link between romantic breakups in college students and ensuing depression (Ayduk, Downey, & Kim, 2001; Kaczmarek et al., 1990). Additionally, breakups have been associated with increased levels of depression in both genders (Maciejewski, Prigerson, & Mazure, 2001; Meaurns, 1991). Furthermore, relationship breakups comprise a prospective risk factor for the initial onset of Major Depressive Disorder in older adolescence (Monroe, Rohde, Seeley, & Lewinsohn, 1999). Frazier and Hurliman (2001) reported that breakups have been regarded as one of the “worst events” in a phone survey inquiring about traumatic events (as cited in Tashiro & Frazier, 2003).

According to Janowiak, Mei-Tal, and Drapkin (1995) the college environment generally does not facilitate one’s grieving process, regardless of students’ presenting issues. For example, the intensity and duration of grief that college students experience after a death-related loss is often underestimated and may be perceived by others as an uncomfortable topic to address (Balk, 1997; Balk & Vesta, 1998). Therefore, the grief process may be hindered. This is important to note as an unfinished grieving process may negate a person’s continued development and self-growth (Price, Dinas, Dunn,
Winterowd, 1995). When even death-related losses are not afforded adequate attention in the college milieu, one can imagine how marginalized individuals experiencing non-death losses such as nonmarital relationship breakups might feel. Thus, grieving may be further impeded when the loss reflects a romantic relationship dissolution. In addition to addressing the intense emotions breakups engender, it is important to consider the developmental issues that may be potentially impacted by breakups.

**Impact on Development**

College affords opportunities for young adults to explore and solidify their sense of self, develop intimate and fulfilling interpersonal relationships, explore their career interests and ambitions, and develop a trajectory for their futures. Traditional-aged college students must negotiate various developmental transitions throughout their academic career. The developmental areas that seem most likely to be negatively impacted by romantic relationship dissolutions involve those focused on identity formation, interpersonal competence, and intimate relationship cultivation/maintenance. Balk (2001) and Balk and Vesta (1998) noted that grief may interfere with developmental issues inherent in the college student population, as grieving students may be mired in their grief. It makes sense that it might be challenging to direct focus on working through developmental transitions when one is overwhelmed with the grief of a significant loss. In order to understand the importance of these developmental transitions, it is essential to briefly outline two prominent developmental theories. Since a complete review of both of these theories is beyond the scope of this dissertation, an abbreviated description is provided.

Erikson (1966) described 8 important psychosocial stages individuals negotiate during the course of their lifetime. The two stages most relevant to traditional-aged
college students include identity versus role confusion and intimacy versus isolation. During their experience in college, young adults will explore various identities in an attempt to establish an integrated sense of self. Since relationship breakups generate intense emotions, it seems possible that a breakup may impact and, perhaps, even disrupt the process of exploring and solidifying identity, particularly for individuals lacking a strong system for making sense of their breakup (i.e., a high sense of coherence). Additionally, since breakups are interpersonal in nature, the resolution of intimacy versus isolation may be impacted by a relationship termination. This stage reflects the ability to develop intimacy with another individual, express and disclose feelings, and cultivate as well as maintain relationships. Thus, it is likely that a relationship breakup will have an impact on individuals’ current perceptions about romantic relationships as well as their beliefs about and experiences in future relationships. In addition to Erikson’s theory, Chickering’s (1969, 1993) Theory of College Student Identity Development is important to review when considering the potential impact of relationship dissolutions on psychological development in young adulthood. Since this theory is specifically tailored to college student development, a more thorough review is offered.

Building from Erikson’s (1966) concepts of identity and intimacy, Chickering (1969) viewed the establishment of identity as a central issue for college students. In Chickering’s seminal work (1969), he proposed seven sequential vectors associated with college student identity development including: developing competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing integrity. After considering the influence of interdependence and interpersonal relationships on college student development, he revised the original seven vectors. The modified vectors included: developing
competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, developing integrity (Chickering & Reisser, 1993).

The vectors that seem most likely to be impacted by relationship breakups include: managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity. Since relationship breakups can evoke strong emotions, it seems that exploring the feelings generated by these losses is warranted. Chickering contended that individuals who successfully work through managing emotions are better able to recognize, express, accept, balance, and control their feelings. In regards to moving through autonomy toward interdependence and developing mature interpersonal relationships, Chickering recognized that it is important for college students to balance the need for self-sufficiency with need for connectedness. He noted that individuals who negotiate these vectors are able to differentiate among nurturing and healthy relationships and those relationships that are unhealthy and unstable. Furthermore, commitment in interpersonal relationships generally increases, as stability and loyalty persist through adversity, change, and separation.

Developmental goals associated with the establishing identity vector include: the integration and consistency of personality, greater acceptance and comfort with one’s body and overall appearance, greater personal security and self-worth, the ability to integrate feedback from others, and increased self-acceptance and self-esteem (Chickering & Reisser, 1993). It seems that relationship breakups may impact individuals’ perceptions and confidence in these areas. The development of self-esteem is crucial in dealing with current and future relationship breakups, as Frazier and Cook
(1993) noted that lower self-esteem is related to experiencing higher levels of distress post-breakup, feeling less recovered, and experiencing more adjustment difficulties. Thus, addressing any self-esteem issues that a breakup highlights might be helpful not only in coping with a current relationship dissolution, but may also assist in buffering individuals against the distress that future breakups may generate. Romantic relationship terminations can be an opportunity for young adults to assess the nature of the dissolved relationship, what they desire in a relationship, how they can achieve and sustain healthy and mature future relationships, and how they perceive and maintain their self-esteem. In contrast, it is possible that breakups may generate negative perceptions about relationships that might impact development in these domains. Since these relationships are often minimized, it is helpful to continue expanding upon the nonmarital relationship loss literature. Thus, it seems important to discover what facilitates growth as well as what might hinder growth after a relationship breakup. Clearly, romantic relationship dissolutions represent a salient issue for this population and warrant scholarly inquiry. Although relationship dissolutions may engender difficult emotions, it is important to also explore how adversity may facilitate growth. Thus, while exploring emotional distress post-breakup is warranted, it is also essential to explore aspects of resilience after a relationship loss.

**Personal Growth**

Stress-related growth has been regarded as an important area of exploration (Affleck & Tennen, 1996; Calhoun & Tedeschi, 2001; Davis & McKeary, 2003; Park, Cohen, & Murch, 1996; Tashiro & Frazier, 2003; Tedeschi & Calhoun, 1996; Tedeschi, Calhoun, & Cann, 2007; Tedeschi, Park, & Calhoun, 1998). This body of literature has focused on the positive effects of various types of loss, including the processes that
contribute towards greater personal growth following a significant loss (Calhoun & Tedeschi, 2001; Tedeschi & Cahoun, 1995). Specifically Tedeschi and Calhoun (1996) noted that individuals who have endured various stressful circumstances have reported a greater appreciation for life, a deepening in their interpersonal relationships, positive changes regarding personal perspectives and priorities, a heightened sense of personal resilience and strength, and a greater sense of spirituality. Thus, rather than primarily addressing how a stressful event may threaten and hinder individuals’ functioning, the stress-related growth literature explores how adversity may serve as an impetus for personal growth. Janoff-Bulman’s Assumptive World Theory (1989, 1992) suggests that personal growth may actually alleviate the distress individuals experience following a loss. She contends that part of the emotional distress individuals experience after a loss relates to renegotiating fundamental assumptions. Thus, loss and trauma may force people to reevaluate previous assumptions about the world that no longer seem valid given their current situation. According to Janoff-Bulman (1992) growth transpires when individuals engage in the process of reconstructing their shattered assumptions. The process of restructuring one’s life after enduring an emotionally taxing experience may feel overwhelming and even painful; therefore, it is essential to explore individuals’ potential for resilience and growth.

Although the stress-related growth literature has explored how adversity has positively impacted individuals’ interpersonal relationships (Tedeschi et al., 1998), there have been a paucity of studies that specifically examine positive growth after a romantic relationship dissolution (Hebert & Popadiuk, 2008; Helgeson, 1994a; Tashiro & Frazier, 2003). Tashiro and Frazier (2003) offer support for continuing this area of exploration, as they note that individuals will likely experience several breakups over the course of
their lifetime. Evaluating what contributes towards growth and resilience following a breakup, then, may assist individuals not only in recovering from a current breakup but may also help them develop resilience and skills to recover from future breakups. Furthermore, Weber (1998) noted that many college students regard relationship breakups as a trial and error experience, whereby they are afforded an opportunity to see what they desire in romantic partnerships. Thus, it seems important to explore if and how college students grow in the aftermath of a relationship breakup and whether they translate this learning into their approach towards future relationships. In order to examine what contributes towards growth after a relationship dissolution, it is essential to review what facilitates adjustment after a loss in general. One area noted in the resiliency literature is the concept of meaning-making.

Meaning-Making

Perhaps Victor Frankl stated it best when he commented, “Suffering ceases to be suffering in some way at the moment it finds a meaning” (1963, p. 179). Viktor Emil Frankl (1969) is regarded as a prominent figure in psychology and is associated with logotherapy - an existentialist school of psychotherapy which underscores the importance of finding meaning in life events. Frankl’s theory and therapy emphasize the importance of facilitating meaning in even the most tragic of circumstances. Frankl (1963) believed that a universal meaning does not exist and that meaning cannot be invented but rather it is constructed by each individual through logotherapy. Logotherapy consists of three basic assumptions: life has meaning under all circumstances, people have a will to meaning, and people have freedom under all circumstances to employ the will to meaning as well as construct meaning. (Frankl, 1969).
As a holocaust survivor, Frankl experienced a myriad of personal adversities as well as observed the strife that other individuals in the concentration camps endured. These adversities, in turn, provided the impetus for his assertion that meaning could be derived from even the most dire and desolate of circumstances. Although Frankl had begun the process of developing an existential approach in psychology prior to his experiences as a Holocaust survivor, the experiences he endured as well as observations he noted about human nature during his time at the concentration camps helped solidify his existential theory. Despite the devastating losses, inhumane treatment, and grief Frankl witnessed and endured throughout his experiences in the concentration camps he was able to extract hope and meaning from the tragedies he faced while in these camps. Much of his philosophical thoughts and experiences in the Nazi concentration camps have been recorded in his legendary book *Man’s Search for Meaning* (1963). Frankl also observed that prisoners who became mired in their despair and lost their sense of hope and choice felt apathetic and depressed. In contrast, those who found meaning during their despair, such as recalling and retaining pleasant memories and identifying goals and reasons to keep fighting, were able to marshal the inner strength to endure the tragedies they experienced (Frankl, 1963, 1997). Thus, people could endure horrendous adversities if they could find meaning in their existence and some sense of purpose for continuing to overcome their struggles. This process of constructing meaning after loss has been explored in the literature and offers insights and applications for working with individuals experiencing loss.

Although personal adversity may evoke negative emotions and losses may be difficult for many individuals to negotiate, several studies offer insight regarding how losses can facilitate personal growth if the individual can construe meaning (Edmonds &
Hooker, 1992; Pfost, Stevens, & Wessels, 1989; Schwartzberg & Janoff-Bulman, 1991; Ungar & Florian, 2004). Accordingly, Schwartzberg and Janoff-Bulman (1991) found that bereaved college students who were able to find meaning and coherence regarding death-related losses experienced less intense grief than those individuals who did not construe meaning out of their loss. The participants who could answer the question “Why?” regardless of their actual answers, were grieving less than those persons who did not find answers and those who attributed their losses to chance or fate. Additionally, their results indicated that individuals who perceived the world as random and uncontrollable experienced greater grief. Nearly half of the bereaved participants (45%) reported that their loss provided the impetus for them to reprioritize certain aspects of their lives. For instance, participants noted that after enduring the loss, they started appreciating their interpersonal relationships more and did not take them for granted as they may have previously. Thus, they were able to recognize what was truly meaningful in their lives and what things were relatively insignificant when viewing life in a broader perspective.

In a similar vein, Pfost et al. (1989) found that bereaved persons who reported little meaning in their lives experienced more intense anger after their loss than individuals who had reported higher purpose/meaning in life scores. Edmonds and Hooker (1992) found that individuals who reported higher existential meaning after the death of a close family member experienced lower levels of grief. Furthermore, 71% of the 49 participants in this study reported a positive change in their life goals after experiencing the loss, thus lending credence to the notion that loss can serve as the basis for personal growth. Since the literature has primarily focused on meaning-making after a death-related loss, exploring the relevance of seeking meaning after experiencing non-
death related losses, such as romantic relationship dissolutions, warrants attention. Accordingly, examining individuals’ personal characteristics that facilitate their ability to make sense and meaning after a loss is essential. One personal resource that has been discussed in facilitating individuals’ ability to construe meaning as well as effectively adapt to life circumstances is Antonovsky’s (1987) *Sense of Coherence*.

### Sense of Coherence

As a medical sociologist, Antonovsky (1979) endeavored to explore what personal qualities and resources promoted wellness as opposed to the illness-focused paradigm that dominated research in the medical as well as mental health field at the time. Consequently, he proposed a salutogenic or wellness-focused orientation while eschewing the pathogenic orientation focused on risk factors and disease. Instead of viewing individuals dichotomously as ‘healthy’ versus ‘sick,’ Antonovsky viewed individuals on a health ease/dis-ease continuum whereby adaptive coping facilitates a persons’ movement towards the health ease continuum and ineffectual or maladaptive coping responses shifts individuals toward the dis-ease end. Antonovsky (1987, 1993) explored how “general resistance resources” such as ego strength, social support, religion, and wealth contributed towards wellness including what commonalities these resources shared. Antonovsky (1987) suggested that these resources afford individuals with a sense of consistency, stability, and the belief that they have the ability to deal with life’s challenges effectively and have a reasonable amount of control in impacting their own life circumstances. Antonovsky’s Sense of Coherence (SOC) is defined as:

A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable, and explicable; (2) the
resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement (p. 19)

These three components are referred to as (1) comprehensibility, (2) manageability, and (3) meaningfulness and are measured by the 29-item Orientation to Life Questionnaire (OLQ; Antonovsky, 1987). Antonovsky regarded the meaningfulness component as the most important, as he indicated that this component provides the motivation for individuals to make sense out of their world, to identify and mobilize their current resources, and to seek out new coping resources that may be effective. Thus, meaningfulness refers to one’s belief that life essentially makes sense and that there are at least some aspects of an individual’s life as well as significant stressors that are worthy of investment. Antonovsky (1987, 1993) noted that SOC does not refer to a specific coping strategy, but rather basic characteristics that enable a person to select and employ effective coping strategies when confronted with a stressor.

In support of the importance of this general coping resource, Adams, Bezner, Drabbs, Zambarano, and Steinhardt (2000) found that a strong SOC was a significant predictor of perceived wellness. After introducing a stressful situation to participants, McSherry and Holm (1994) found that participants with low SOC levels reported significantly more anxiety, anger, and stress during the stressful encounter in comparison to individuals with moderate or high SOC levels. Furthermore, individuals with low SOC scores were less likely to utilize approach-oriented coping strategies such as seeking information, preparing to deal with the stressor, implementing positive changes, and assessing the situation. In a study by Flannery, Perry, Penk, and Flannery (1994), SOC was found to correlate negatively with life stress and psychological distress. When compared with locus of control and social support measures, SOC scales were associated
more strongly with anxiety and depression measures, as SOC was a significant predictor for changes on both the Taylor Manifest Anxiety Scale (Taylor, 1953) as well as the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961).

Although SOC has been investigated in areas such as adjustment in persons with disabilities (Lustig, Rosenthal, Strauser, & Haynes, 2000), pregnancy loss (Engelhard, Van den Hout, & Vlaeyen, 2003), bereavement of a spouse (Ungar & Florian, 2004), wellness in college students (Adams et al., 2000), and restructuring illness meaning (Baarnhielm, 2004) there has been no known research to date examining SOC in regards to nonmarital romantic relationship loss. It seems important to further explore how this disposition may particularly impact college students’ adjustment after a relationship loss, as SOC has been noted as a significant contributor to positive mental health adaptation (Ungar & Florian, 2004).

**Summary Statement of the Problem**

As outlined thus far, relationship breakups may be a source of significant stress for many individuals as they often produce a plethora of challenging emotions that individuals must reconcile. These types of losses may be particularly challenging for college students as the college environment may not be conducive to their grieving and breakups in young adulthood may not be recognized by others. Thus, their grief may go unnoticed and individuals may feel disenfranchised in their distress. Additionally, because young adults are undergoing various significant developmental transitions, unresolved grief may interfere with their functioning as well as the important developmental tasks they are negotiating. Since relationship breakups appear to be a salient issue for young adults, it seems important to consider resources that might enable those enduring breakups to cope more effectively with their loss. One potential resilience
resource encompasses Sense of Coherence (SOC), as SOC has been demonstrated to engender positive effects on both physical and emotional well-being after loss (Eriksson & Lindstrom, 2005). While SOC has demonstrated various salutary effects on adjustment after loss, the link between SOC (Antonovsky, 1987) and losses reflecting relationship breakups has not been documented. The current study is important, as it explores the relationships between SOC and nonmarital relationship breakups. It may be helpful to direct attention towards the personal growth that a significant adversity may facilitate in addition to focusing on the distress breakups often produce. Since Tedeschi et al. (2007) underscored the importance of exploring how distress and personal growth can coexist after a stressful experience, it is essential to explore both posttraumatic growth and stress reactions experienced after a breakup. As noted, meaning-making may facilitate personal growth and the dispositional coping resource of SOC (Antonovsky, 1987) may impact the process of meaning-making. The present research will add to the extant literature, as very few studies have explored personal growth and positive consequences after a romantic relationship dissolution (Helgeson, 1994a; Tashiro & Frazier, 2003). Thus, the relation among SOC (Antonovsky, 1987), personal growth, and stress reactions/distress in regards to a relationship breakup will be explored in this study.

**Present Study**

The present study investigated the relationship among sense of coherence, personal growth, and distress college students endorsed after experiencing a nonmarital romantic relationship termination.

Research Questions posed included the following:

1. What are the relationships among sense of coherence, personal growth, and distress reported after a relationship breakup?
2. What is the nature of the relationships between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress)?

3. Is the meaningfulness sense of coherence subscale the best predictor of personal growth and distress experienced after a breakup?

Please note that “breakup timeline” refers to time elapsed since the breakup. Specifically, breakup timeline reflects the number of months that had passed from the participants’ actual breakup to the time of their participation in the present study. Additionally, “initiator status” refers to who initiated the breakup (i.e., you or partner) and “relationship length” refers to the length of the relationship prior to the breakup.

Null and Alternative Hypotheses

Null hypothesis 1a. Participants will not demonstrate a significant correlational relationship between sense of coherence and personal growth, as measured by the total score on the Orientation to Life Questionnaire (Antonovsky, 1987) and the total score on the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), respectively.

Alternative hypothesis 1a. Participants will demonstrate a significant correlational relationship between sense of coherence and personal growth.

Null hypothesis 1b. Participants will not demonstrate a significant correlational relationship between sense of coherence and distress, as measured by the total score on the Orientation to Life Questionnaire (Antonovsky, 1987) and the total score on the Impact of Life Event Scale (Horowitz, Wilner, & Alvarez, 1979), respectively.

Alternative hypothesis 1b. Participants will demonstrate a significant correlational relationship between sense of coherence and distress.
**Null Hypothesis 1c.** Participants will not demonstrate a significant correlational relationship between personal growth and distress, as measured by the total score on the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), and the total score on the Impact of Life Event Scale (Horowitz et al., 1979), respectively.

**Alternative Hypothesis 1c.** Participants will demonstrate a significant correlational relationship between personal growth and distress.

**Null Hypothesis 2.** The canonical correlation analysis between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress) will indicate that all squared canonical correlation coefficients, $R_c^2$, are equal to zero.

**Alternative Hypothesis 2.** The canonical correlation analysis between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress) will indicate that all squared canonical correlation coefficients, $R_c^2$, are not equal to zero.

**Null Hypothesis 3a.** After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will not contribute significant unique variance in explaining personal growth.

**Alternative Hypothesis 3a.** After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will contribute significant unique variance in explaining personal growth.
Null Hypothesis 3b. After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will not contribute significant unique variance in explaining distress.

Alternative Hypothesis 3b. After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will contribute significant unique variance in explaining distress.

Chapter II outlines a more detailed explanation of the development of Antonovsky's (1987) Sense of Coherence, including a discussion about the three SOC components as well as an examination of other important factors influencing SOC. SOC development, application and relevant research is outlined as well. Additionally, research reflecting personal growth and meaning-making after a loss is examined and research regarding romantic relationship loss is reviewed in greater detail.
CHAPTER II
LITERATURE REVIEW

Introduction

What helps individuals mobilize their internal as well as external resources in an effort to surmount difficult circumstances? Why do some individuals experience this process as less cumbersome than others, whereas others seem to falter when presented with adversity? Since stressors are inherent in life, examining what facilitates resilience after experiencing challenging circumstances deserves attention. As noted previously, sense of coherence reflects a general resilience resource and orientation encompassing three components: comprehensibility (the degree to which people believe that life events are predictable and explicable), manageability (the degree to which people have access to coping resources and/or the belief that they can access these resources), and meaningfulness (the degree to which people perceive life stressors as worthy of investment and meaningful).

Chapter II offers a more detailed review of Antonovsky’s Sense of Coherence (SOC) concept, including how his focus on health and resilience (salutogenesis) markedly differed from the prevailing pathogenic focus in the medical sociology field at the time he was developing his SOC concept. In addition to reviewing the zeitgeist at the time of Antonovsky’s introduction of SOC, the chapter also outlines the development of SOC, important SOC terms and related concepts, and relevant research elucidating the applicability of SOC to well-being. Additionally, this chapter outlines research exploring personal growth and meaning-making after loss as well as literature investigating romantic relationship dissolutions.
Salutogenesis vs. Pathogenesis

Although there is merit in exploring the contributions towards disease and illness, it is also worthwhile to explore the components that develop, facilitate, and maintain health. As such, Antonovsky (1979, 1987) proposed investigating what factors were involved in maintaining health (salutogenesis) as opposed to adhering to the prevailing focus at the time on exploring only pathology (pathogenesis). The catalyst for his proposition of the salutogenic model involved his work in 1970, investigating Israeli women’s adaptation to menopause. Specifically, Antonovsky inquired whether or not these females had been in a concentration camp. After comparing the emotional health of concentration camp survivors to a control group, he noticed that 51% of the individuals in the control group were faring quite well, whereas 29% of the female survivors of concentration camps endorsed good overall emotional health (1979, 1987). What seemed most salient to him was not the fact that a greater percentage of the control group reported good overall health, but the fact that 29% of the individuals who had endured unfathomable atrocities in the concentration camps had somehow managed to not only survive, but actually thrive, despite their painful experiences (Antonovsky, 1979, 1987). Essentially, he felt compelled to examine what contributed towards their positive health outcomes; thus resulting in the genesis of the salutogenic approach.

In order to understand the unique contribution of salutogenesis to the field, it is important to distinguish this model from pathogenesis. Whereas pathogenesis explores the origins of disease, salutogenesis poses the following question: “Why are people located toward the positive end of the health ease/dis-ease continuum, or why do they move toward this end, whatever their location at any given time” (Antonovsky, 1987, p. xii)? Thus, individuals are placed on a continuum in regards to health ease and dis-ease
as opposed to dichotomous assignment. Essentially, this view holds that no persons are
the epitome of complete health, nor are any individuals regarded as solely ill. Rather, the
ways in which individuals manage tension results in movement towards the health-ease
end of the spectrum or the dis-ease pole (Antonovsky, 1979, 1987, 1990a). He postulated
that when individuals confront stressors, they experience a state of tension that must be
resolved. If they are able to resolve the tension, a salutary result ensues. Conversely, if
they are unable to engage in successful tension management, the result may be
pathogenic. Studying these factors led him to develop the concept of sense of coherence.

**Sense of Coherence**

Sense of Coherence (SOC) is regarded as a dispositional orientation as opposed to
a specific coping strategy. For ease of reading, sense of coherence will be abbreviated
SOC for the remainder of Chapter II. As noted previously, this construct consists of
three components: comprehensibility, manageability, and meaningfulness and is
measured by the Orientation to Life Questionnaire (Antonovsky, 1987).

Comprehensibility refers to the perception that the stimuli individuals confront are
orderly, predictable, and explainable. As such, events are not construed as random, but
rather as making cognitive sense. Manageability reflects the degree to which persons
perceive that resources are at their disposal or that they are able to marshal the requisite
resources in order to cope with a particular stressor. Finally, meaningfulness serves as
the motivational element of this construct. Challenges are welcomed as opposed to being
viewed as burdens, life makes sense emotionally, and adversities are taken on as persons
are determined to seek meaning in their challenges. Meaningfulness is the most crucial
component because it serves as the drive to enhance people’s understanding of a stressor
and derive meaning from the circumstance. Individuals with a strong SOC are able to
make sense out of stimuli and stressors and to perceive them as orderly and understood. Consequently, they can better understand how the stressor fits into their life and how they may successfully address the stressor. Thus, a strong SOC may serve as a buffer against adversities individuals encounter throughout their lives. It is important to note that it is not necessary to feel that all aspects of life are comprehensible, manageable, and meaningful in order to have a strong SOC. Instead, it is necessary to perceive the realms of life that are of subjective importance as comprehensible, manageable, and meaningful (Antonovsky, 1987). Thus, to a certain extent, individuals can narrow and broaden the boundaries to which their SOC applies and impacts.

In general, SOC enables people to make sense out of as well as cope with the multitude of stressors individuals encounter throughout their lives. In order to further understand this concept it is helpful to review what contributes towards the development of SOC, specifically how generalized resistance resources/generalized resistance deficits impact, facilitate, and maintain SOC.

**Generalized Resistance Resources/Generalized Resistance Deficits**

One of the cornerstones of a stronger SOC involves a person’s ability to access as well as mobilize *generalized resistance resources* (GRRs). In fact, SOC resulted from an interest in exploring what was common to all GRRs—the ability to assist individuals in making sense out of the stressors they encountered (Antonovsky, 1987). Antonovsky (1979) defines GRRs as “any characteristic of the person, the group, or the environment that can facilitate effective tension management” (p. 99). Thus, GRRs assisted individuals with coping with life challenges. Examples of GRRs outlined by Antonovsky (1979) include:

1. Physical/biochemical composition.
2. Artificial-material resources, including wealth.

3. Cognitive as well as emotional strengths, including knowledge-intelligence and ego identity.

4. Interpersonal-relational GRRs, encompassing social support networks as well as the connections and involvement to a social group.

5. Macrosociocultural GRRs, consisting of religion, cultural stability, and philosophy that help provide answers to life’s unknowns.

6. Valuative-attitudinal GRRs which are flexible and rational coping strategies.

Antonovsky proposed that these GRRs both assist in developing SOC as well as reinforcing SOC. The physical and biochemical GRRs encompass attributes of individuals’ physical make-up that assist them in fending off dis-ease at the cellular level. Thus, a strong immune system could be included as a GRR in this domain.

Artificial/material resources involve individuals’ capacities to access resources and services that might assist in alleviating stress. In regards to the cognitive and emotional domain, this category reflects knowledge-intelligence and ego identity. Knowledge-intelligence involves persons’ current knowledge-base as well as their capability for acquiring the requisite knowledge when attempting to cope with a stressor. The emotional aspect of this particular GRR involves ego identity which is regarded as “a sense of the inner person, integrated and stable, yet dynamic and flexible; related to social and cultural reality, yet with independence” (Antonovsky, 1979, p. 109)

The interpersonal-relational GRRs reflect social support networks the individual maintains, including the level of commitment invested in these relations. The macrosociocultural GRR includes how culture allows structure for individuals by
providing solutions to problems through its institutions. For instance, religion may be an outlet whereby persons find comfort, support, solace, and solutions to their concerns.

Finally, the valuative-attitudinal GRR reflects a coping plan that individuals employ. Antonovksy noted that the most effective plans involved a "rational, flexible, and farsighted" coping plan (1979, p. 112). Specifically, rational refers to the idea that individuals accurately assess the threat posed by the stressor, flexibility involves the ability to adapt coping strategies as needed and appropriate, and farsightedness reflects the ability to both anticipate the efficacy of the plan as well as how it will be received by others as well as internally. Essentially, GRRs assist individuals with making sense of stressors and stimuli they experience which, in turn, results in the development of a stronger SOC. Reciprocally, a strong SOC can help individuals select appropriate and available GRRs to deal with current stressors. Persons possessing a stronger SOC are more likely to identify a greater amount of GRRs at their disposal.

In contrast to GRRs are generalized resistance deficits (GRDs). Antonovksy (1987) described GRDs as insufficient amounts of GRRs, as individuals may be on the lower end of the continuum in terms of the six aforementioned resources. When persons have sufficient resources and are located on the higher end of the continuum, they are believed to possess GRRs whereas when their resources fall on the lower end of the continuum, they are thought to reflect GRDs. GRRs contribute towards a stronger SOC, whereas GRDs weaken SOC. Examples of GRDs include: "low self-esteem, isolation, low social class, or cultural stability" (Antonovsky, 1990b, p. 159). Other GRDs reflect limited knowledge, limited social support, and limited coping strategies. In order to further understand SOC, it is important to explore how SOC develops, is applied, and how it ultimately leads towards health-ease as opposed to dis-ease.
Development of SOC

Antonovsky asked “How and why does a strong SOC promote health” (1987, p. 129)? In order to answer this question, it is helpful to review the general developmental trajectory of SOC. In regards to the development of a strong or weak SOC, Antonovsky (1987, 1990a, 1990b) suggests that GRRs/GRDs and life experiences help create SOC. Individuals are constantly encountering stressful situations that necessitate investment and resolution from the time they are born. To the extent that these stressors are understood, resolved or coped with effectively, the result will be a stronger SOC. It is important to note that in order to develop a strong SOC it is necessary for individuals to encounter adversity so that they can build up a repertoire of skills (Antonovsky, 1990a). If all experiences are predictable, then when unforeseen circumstances arise, persons may not be equipped to deal with novel circumstances. Thus, possessing the ability to occasionally “expect the unexpected” is important in developing a stronger SOC.

In regards to development, SOC is thought to be stable in young adulthood, specifically by the time a person reaches age 30 (Antonovsky, 1979, 1987, 1990a, 1990b). However, some studies have not found evidence supporting the stabilization of SOC with increased age (Feldt, Leskinen, Kinnunen, & Ruoppila, 2003; Smith, Breslin, & Beaton, 2003). It is interesting to note that research has found that among the elderly (85 years of age or older), sense of coherence was just as strong, if not stronger, in comparison to younger aged groups (Nygren et al., 2005). Thus, SOC does not appear to deteriorate based on the aging process. Essentially, the experiences shaped by GRRs and GRDs throughout individuals’ lives help determine where the location of their relatively stable SOC is on the continuum.
Antonovsky (1987, 1991) maintains that SOC remains more stable among individuals endorsing high SOC scores as opposed to those with a low SOC. In support, Hakanen, Feldt, and Leskinen (2007) found that SOC was more stable among high-SOC scorers as compared with low-SOC scorers. The investigators were continuing a longitudinal Healthy Child study, originally conducted in Finland from 1961-1963 (N=1084), where researchers had studied SOC in Finnish adolescents (Kalimo & Vuori, 1991). Individuals were invited to participate again in 1985 and in 1998, where their SOC measures were recorded at these two different intervals. Ultimately, in 1998, there were 532 employed Finnish participants whose data could be still assessed in regards to SOC stability since the study’s inception. Using the two time periods (1985 and 1998) to assess stability of SOC after age 30, the researchers employed Factor Mixture Modeling. Results indicated that the stability of SOC after age 30 depends strongly on the level. Thus, SOC was more stable among high-scorers as compared with low-scorers. The results suggest that the stability of SOC after age 30 is largely dependent on individuals’ levels of SOC and not simply the advancement of age. However, the authors concede that they did not explore any factors in adulthood that may have either bolstered or diminished SOC after age 30, as significant stressors may have an impact on levels of SOC. Thus, as noted previously, there still exists the potential for SOC to be modifiable and dynamic.

Although SOC is regarded as relatively stable disposition by adulthood, it is still malleable under certain circumstances. For instance, Antonovsky (1990a) described two types of situations that could impact SOC after it has been established. He noted that significant stressors, which impact GRR’s, can weaken individuals’ SOC. An unanticipated trauma may occur such as war, natural disaster, or a death which may serve
to weaken SOC. In addition to a one-time traumatic event, SOC can be weakened more gradually, whereby individuals choose resources and responses to situations that result in a change in their SOC. There almost always exists an element of choice in moving towards health-ease or dis-ease. Thus SOC is not immutable; rather it is generally well-established but can be impacted by the way individuals respond to stressors as well as how they utilize and maintain their GRRs. However, it should be noted that:

...change of this type is always within the context of one’s previous level of the sense of coherence, is always slow, and is always part of a web of life experiences that transmit stimuli that are more or less coherent. Movement toward the strong end of the continuum always requires hard work (Antonovsky, 1990a, p. 236)

In order to further understand how strong versus weak SOC is established, it is important to explore how SOC influences persons’ appraisals of stressful situations and how SOC is actually applied.

**Appraisal of Stress**

Antonovsky (1979, 1987) noted that when individuals encounter a stressor, a three-stage appraisal process ensues. In the initial stage, referred to as “primary appraisal I” (Antonovsky, 1987, p. 132), the individual must determine whether or not a particular stimulus constitutes a stressor. Persons possessing a stronger SOC will be more inclined to regard a stimulus as a non-stressor, whereas those with a weaker SOC will perceive the stimulus as a stressor. Thus, those with higher SOC scores will feel confident that they will be able to adapt to the circumstances and effectively manage the stimulus, resulting in regarding the stimulus as a non-stressor. They may also be more likely to avoid stressors where they do not believe they would be able to cope effectively (Antonovsky, 1990b). Primary-appraisal II occurs once a stimulus has been identified as a stressor and the individual is compelled to assess whether the stressor is a pathogenic (unwanted and
harmful), salutogenic (welcomed and beneficial), benign, or irrelevant threat (Antonovsky, 1987). Individuals with higher SOC scores tend to perceive the stressor as irrelevant or more benign in comparison to those with a weak SOC (Amirkhan & Greaves, 2003). It was theorized that those with a higher SOC would introduce order and meaning and would experience confidence regarding their ability to allocate appropriate resources, and thus would be more inclined to regard a potential stressor as salutogenic, benign, or irrelevant (Antonovsky, 1987). Finally, primary appraisal III transpires when individuals identify a stimulus as a stressor and do not perceive it as benign or irrelevant; rather the stimulus is regarded as a threat. Thus, phase III reflects individuals’ reaction to the perceived threat. In regards to emotional reactions to stressors, Antonovsky (1987) stated that those with stronger SOC’S were more inclined to have focused rather than diffuse emotions, possessed a greater awareness of emotions and could articulate them, and were more likely to attribute blame for a stressor to actions rather than to their own personal character.

In general, a stronger SOC enables individuals to regard situations as less threatening, mobilize appropriate resources when threatened, and integrate as well as apply feedback to help deal with a stressor. A strong SOC is not a specific coping strategy; rather a strong SOC assists individuals in appraising situations and in selecting a particular coping strategy that seems most relevant for dealing with a specific situation. Thus, persons possessing a strong SOC will not capriciously select coping strategies or uniformly apply a specific coping strategy that has worked in the past, as each situation may warrant the introduction of different coping strategies at different times. In order to understand the unique contributions of SOC, it is helpful to briefly review its similarities as well as differences to like constructs.
Relationship with Similar Constructs

SOC has been associated with measurements of optimism, hardiness, learned resourcefulness, locus of control, mastery, self-esteem, and self-efficacy (Eriksson & Lindstrom, 2006). Gruszczynska (2006) noted the following correlations among SOC and other mental health measures: Generalized self-efficacy ($r = .520$); optimism ($r = .597$); depression ($r = -.504$); neuroticism ($r = -.632$); and trait anxiety ($r = -.703$). Thus, SOC correlates in the expected direction with measures of mental health. SOC has also been found to correlate with the Big Five traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism (Ebert, Tucker, & Roth, 2002; Ruiselova & Korcova, 2000). Smith and Meyers (1997) explored the relationships among SOC, learned helplessness, and locus of control, as well as instruments assessing stress and physical health. The researchers noted that “sense of coherence was predicated by greater general self-efficacy, less perceived stress, greater hardiness, fewer hassles, a more internal locus of control, and being female” (p. 513). The researchers interpreted these findings as indicative of these resilience measures evaluating a similar core construct. Although SOC correlates with these measures of well-being, the three components of comprehensibility, manageability, and meaningfulness represent its unique contribution. Antonovsky (1987) noted that SOC enables individuals to adopt and employ appropriate coping strategies. Research has also supported the salutogenic benefits SOC affords when compared with similar measures.

Although SOC has often been compared to hardiness and optimism, research has demonstrated differences among SOC and these constructs. Thus, it appears that SOC offers a unique contribution to the resilience literature not accounted for by these other
constructs and is worthy of additional scientific inquiry. Specifically, Williams’ (1990) explored effects of general stress, situation-specific stress, hardiness, and SOC on illness. Results revealed that SOC was significantly more strongly correlated with illness as well as with the Global Inventory of Stressors in comparison to hardiness. The strongest correlation was between Global Stress and SOC. After reviewing these results, Williams’ revised his original path analysis model linking hardiness to illness and instead constructed a model illustrating the connection of SOC with illness, as this construct accounted for more of the variance between stress and illness than hardiness. In another study by Feldt, Makikangas, and Aunola (2006), SOC was linked more strongly to health behaviors in comparison to optimism. Factor analysis revealed that, although SOC and optimism were highly associated with each other, the items of the optimism scale did not load on the sense of coherence scale and vice versa. Thus, these concepts were interrelated but not identical constructs. In order to further explain how SOC manifests and contributes towards adjustment and health, it is helpful to explore relevant research studies.

**Research**

SOC and its contributions to wellness and adaptation have been explored in the literature. Since the current study explored mental health adjustment after a loss (i.e., personal growth and distress) it is important to examine SOC’s contributions to well-being, adjustment, and general health. Specifically, high SOC has been linked with greater physical and mental health (Amirkhan & Greaves, 2003; Callahan & Pineus, 1995; Eriksson & Lindstrom, 2006; Feldt, Kokko, Kinnunen, & Pulkkinen, 2005; Julkunen & Ahlstrom, 2005; Kivimaki, Feldt, Vahtera, & Nurmi, 2000; Pallant & Lae, 2002; Richardson & Ratner, 2005; Reid, Aunola, Feldt, Leinonen, & Ruoppila, 2005;
Skarsater, Langius, Agren, Haggstrom, & Dencker, 2005). In a descriptive review of 458 scientific publications and 13 doctoral theses published between 1992 and 2003, Eriksson and Lindstrom (2006) found that SOC is strongly associated with perceived health, particularly mental health. The researchers included only studies where multivariate analyses were employed and where confounding variables such as age, initial health status, marital status, leisure activities, education, income, and social support were controlled for. SOC was explored as a dependent or criterion variable as well as an independent or predictor variable in regards to health. SOC was found to have a strong negative association with anger, burnout, depression, hostility, post-traumatic stress, anxiety, demoralization, hopelessness, and perceived stressors. In regards to mediating effects, SOC has served as a mediator between stress and mental health. Specifically, SOC has been demonstrated as a mediator of stress (from adverse experiences) and psychological well-being (Gana, 2001). Using structural equation modeling, Gana found that sense of coherence mediated the adversity/well-being relationship. Thus, results indicated that stressful experiences/adversity did not impact psychological well-being directly but did impact psychological well-being via the mediator of sense of coherence. SOC has also been demonstrated to have a moderating effect on health as well, as those endorsing higher SOC have reported lower levels of physiological and psychological distress subsequent to experiencing a stressful situation (McSherry & Holm, 1994).

In synthesizing the results of the systematic review of SOC research, Lindstrom and Eriksson (2006) noted that, while high SOC has been associated with greater perceived health, the relationship between those individuals with moderate to low SOC scores and perceived health is not quite as clear. In general, the researchers found that SOC seems to promote resilience and can partly explain aspects of mental health, but
SOC is not the sole determinant of health. Nevertheless they underscored the importance of continuing to investigate the associations between SOC and well-being as well as SOC and specific life events. The current study furthered this area of recommended inquiry, as the current study investigated the relationships among SOC and well-being (personal growth and distress) after a specific life event (relationship breakup).

As noted previously, SOC has been negatively associated with anger and positively associated with well-being. Specifically, Julkunen and Ahlstsrom (2005) investigated the relationship of hostility and anger expression to sense of coherence and how these factors contributed towards health-related quality of life (HQL). Participants consisted of 774 individuals, primarily males, who met criteria for being at risk for cardiovascular disease. These individuals represented a sub-group of a previous study exploring coronary heart disease prevention. In order to assess personality factors related to SOC and assess predictors of HQL, the researchers administered several self-report measures at baseline reflecting cynicism, anger, expression, sense of coherence, and health-related quality of life. HQL was again assessed 6 months later at follow-up. HQL involves such areas as general health, emotional well-being and social functioning. The investigators employed path analysis and results revealed that SOC was the strongest predictor of HQL while anger and hostility lost their direct impact on HQL. When SOC, anger, and hostility were analyzed together, the zero-order significant correlations of hostility and anger factors with HQL were completely accounted for by SOC. Thus, SOC appeared to mediate the effects of anger and hostility on health-related quality of life and appeared to offer salutogenic benefits. Additionally, SOC was associated with the control of anger expression, including low levels of anger suppression and overtly expressed anger. Since romantic relationship breakups have the potential to evoke strong
negative emotions, it is important to continue exploring how SOC facilitates well-being in this domain.

Research has also focused on the processes underlying SOC. Specifically, Amirkhan and Greaves (2003) explored potential perceptual, attributional, and behavioral mechanisms and their relationship to SOC. Perceptions referred to how participants spontaneously perceived a stressful occurrence, attributions referred to participants’ cognitions about the stressor including reasons why the stressor had occurred, and behavior mechanisms referred to participants’ coping responses after encountering a stressor. Essentially, the authors endeavored to explain how SOC produces its salutogenic benefits. In a series of 4 studies, the authors explored how high SOC scorers versus low SOC scorers differed in their perceptions, attributions, and coping behaviors. Study 1 involved exploring how participants spontaneously perceived a stressful occurrence. Participants consisted of 116 Introductory Psychology students, primarily female, who varied in age and ethnicity. Stressors were listed on 23 cards and individuals were instructed to place the cards into 2 conceptually distinct piles based on their own personal sorting criteria. After 4 cards had been allocated to a particular pile, researchers requested an explanation of their sorting rationale. The participants were allowed to continue if their rules conformed to the basic sorting rules (i.e., there must be at least 1 card per pile). After the first sort was completed, the participants were instructed to repeat this process with a different rationale. This card sorting process continued until a maximum of 4 distinct sorting categories had been identified or until participants could no longer identify another sorting rationale. If at this point participants had not invoked coherence as a type of sorting strategy, they were instructed to then sort according to this rule (i.e., creating a “meaningful” card pile versus “meaningless” card
pile). After finishing this task, the Orientation to Life Questionnaire (OLQ; Antonovsky, 1987) and Amirkhan’s Coping Strategy Indicator (CSI, as cited in Amirkhan & Greaves, 2003) were administered in order to determine SOC level and type of coping strategies utilized subsequent to a specific stressor, respectively. These instruments were administered in counter-balanced order. While Chi-square tests revealed no significant difference between high SOC scorers and low SOC scorers in regards to the frequency of spontaneously sorting cards based on a “coherence” rule, high SOC scorers classified more events as coherent once instructed to sort based on coherence. In regards to coping responses, those endorsing higher SOC were less likely to use avoidance and more likely to use problem-solving as a strategy in dealing with a particular stressor. The authors noted that, while the perceptual process is subtle, (since differences among low versus high scorers were not apparent until after they were instructed to classify events according to coherence) SOC seemed to impact perceptions of stress. Relating this research to the present study, the present study also explored how varying levels of sense of coherence are related to perceptions of distress after a stressful event such as a relationship breakup.

Study 2 involved exploring individuals’ cognitions regarding the cause of the stressor, including whether high SOC scorers assigned different attributions for the stressors they experienced. Ninety Introductory Psychology students participated in this study. Similar to the previous study, the participants were primarily female and varied according to age and ethnicity. The procedure was essentially the same as that of Study 1, except participants now sorted 25 cards detailing different attributions for a stressor. For instance, “a result of poor planning” and “due to lack of information” were among the 25 attributions participants were asked to assign to piles. Again, when they had
completed 4 distinct sorting groupings or could think of no more, if a coherence grouping for the attributions had not been spontaneously invoked, the researchers requested that they sort the attributions based on coherence. The OLQ and CSI were again administered in counter-balanced order. Differences among high SOC scorers and low SOC scorers in regards to attributions were not significant. However, in regards to coping, high SOC scorers were found to employ more effective coping means. In connecting these results to the present study, it seems possible that high SOC scorers might have more adaptive coping strategies in addressing reactions to a romantic relationship dissolution which enable them to alleviate their distress and potentially accrue personal growth post-breakup.

Study 3 involved investigating similarities and differences among controllability and coherence, as participants were asked to categorize events according to these two sorting rules. Fifty-two Introductory Psychology students participated in the study. The composition of this group was primarily female with a range of ages and ethnicities. The OLQ and CSI were utilized again along with Tipton and Worthington’s (1984) Generalized Self-efficacy Scale and a subscale of Paulhus’ (1983) Spheres of Control Battery (as cited in Amirkhan & Greaves, 2003). The self-efficacy and control measures were employed to assess dimensions of control to determine if coherence is viewed differently in comparison to control. Rather than creating their own sorting rules, participants were asked to sort cards based on coherent vs. noncoherent piles and controllable vs. noncontrollable piles. Results revealed that high SOC scorers classified more events as coherent. Thus, high SOC scorers were able to regard events as making sense, having meaning, and as happening for a reason. Regardless of SOC scores, participants classified a relatively similar number of events into controllable piles.
Additionally, results indicated that the two sorting rules generated different sorting patterns, as participants regarded coherence and control as different constructs.

Furthermore, OLQ scores were significantly correlated with the number of coherent cards but not with the number of cards classified as controllable (i.e., participants’ perceptions that the events was controllable or not). In other words, high SOC was significantly related to the participants’ ability to construe events as more coherent but was not significantly related to participants’ ability to perceive events as more or less controllable. The self-efficacy and locus-of-control measures were significantly related to the number of cards placed in control piles but these measures were not related to the number of cards placed in coherent piles. Thus, it appears that the OLQ has discriminant validity when compared with similar constructs such as self-efficacy and locus-of-control as individuals are able to distinguish among the concepts. In regards to coping responses, high SOC scores were associated with more adaptive coping responses. High SOC appeared to offer utility in impacting the selection of adaptive coping responses. Again, high SOC might enable those individuals enduring breakups to select and employ more adaptive coping strategies, thus assuaging their distress and bolstering their ability to accrue personal growth after the loss.

Study 4 involved using a data archive of 75 individuals who had participated in a six-month longitudinal study of unemployment. The original sample was diverse in respect to gender, age, ethnicity, education level, marital status, and income. These individuals were invited to complete the OLQ and Coping Strategy Indicator (CSI) as well as measures assessing depression and global health in 4 waves (i.e. phases). The first wave began at the time of participation, followed by another wave every 2 months, yielding a total of 4 waves over a 6 month period. OLQ scores from Wave I were used to
predict Wave II CSI scores to see if SOC influenced later coping responses. Results indicated that while Wave I OLQ scores related significantly to Wave I coping responses, Wave I OLQ scores were more strongly related to Wave II coping scores. This pattern was noted among all waves of the study. Sense of Coherence also was found to be a significant predictor of mental health and global health. In general, these 4 studies suggest that the direct affects of SOC may be related to perceptual mechanisms, high SOC enables individuals to employ more adaptive coping strategies (problem-solving as opposed to avoidance) in response to a stressor, and the coping patterns high SOC scorers employ are effective in preventing depression and stress-related illness. Thus, coping serves as a mediator between SOC and illness, although SOC appears to have a direct impact itself on health. It seems important to explore how SOC may facilitate adjustment in response to a stressor such as a breakup as well.

Since the current study involves investigating SOC after a loss, several studies reflecting adjustment and adaptation following stressful circumstances as well as following a significant loss are described. In addition to serving as a mediator in regards to health, SOC has also been regarded as a moderator in buffering the impact of stressful life events. Richardson and Ratner (2005) investigated whether SOC moderated the relationship between stressful life events and health status in a nationally representative sample of 6505 Canadian household residents aged 30 years of age or older. The longitudinal data was collected in 1998 and 2000. These individuals completed the SOC scale as well as questionnaires inquiring about the number of recent stressful life events (RLE), number of visits to a medical doctor, and self-reported health status (SRH). Linear regression was employed to analyze SOC and the experience of RLE on SRH. In regards to self-reported health status, results revealed a significant interaction between
RLE and SOC with the size of the main effect of RLE dependent on the value of SOC. Thus, level of SOC moderated the strength of the relationship between stressful life events (RLE) and self-reported health status (SRH). Specifically, results indicated that for individuals with above average SOC, there was not a significant impact of RLE on SRH. Thus, strong SOC appears to buffer the effects of stressful recent life events on self-reported health. Again, this research supports the idea that the possession of a strong SOC can offset the impact of recent stressful life events on individuals’ health and well-being. Perhaps, high SOC can also assist with adjustment after a relationship breakup as well.

Both Surtees, Wainwright, and Khaw (2006) as well as Antonovsky and Sagy (1986) explored the relationship of SOC to adverse life events. Surtees et al. (2006) examined how SOC related to individuals’ adaptation after stressful circumstances including such events as death, separation from a partner, job loss, and other adversities individuals might encounter throughout the course of their lives. It should be noted that for this particular study, over 100,000 adverse life events were assessed. A population-based group of 20,921 individuals in the European Prospective Investigation into Cancer-Norfolk Study completed both an assessment inquiring about their lifetime experiences of adverse events as well as the SOC measure. Differences in the mean number of events reported, the mean impact, and the mean adaptation scores in regards to strong and weak SOC were assessed through an ANOVA. Results revealed that individuals endorsing weaker SOC reported significantly slower adaptation in response to the effects of the adversity they encountered. Conversely, those individuals possessing stronger SOC reported quicker adaptation after enduring a stressful event. The current study also
explored the relationship between SOC and adaptation to a stressful event, specifically a relationship breakup.

In regards to the Antonovsky and Sagy (1986) study, the researchers investigated 418 Israeli students from grades 9-12. Seventy-eight of these students had been informed that they were about to be evacuated from their settlements, thus constituting a significant stressor. The remaining 340 students served as the comparison group. Their emotional responses in terms of trait anxiety were assessed 6 weeks before the evacuation transpired. State anxiety was assessed both 1 week prior to the evacuation and 6 weeks post-evacuation. As expected, trait anxiety had a significant negative relationship with SOC, as those endorsing higher levels of SOC reported lower levels of anxiety. Thus, higher SOC scorers were more prone to respond to life with a less anxious disposition. For those experiencing evacuation, results demonstrated no significant relationship between SOC and state anxiety 1 week prior to the evacuation, but a statistically significant relationship between SOC and state anxiety was noted 6 weeks after evacuation (i.e., higher SOC was associated with lower state anxiety). The differences between the SOC and state anxiety correlations 1 week prior to evacuation and their correlation 6 weeks post-evacuation were significant, as these two measures were more highly correlated 6 weeks after the evacuation. This same pattern was found in the comparison group. The authors suggested that while SOC may buffer the impact of most stressful situations, the benefits of SOC may not be immediately apparent under acute and communal stress, such as an evacuation. The current study intends to explore how and if SOC contributes towards adaptation after a romantic relationship loss, or if this type of loss comprises a stressor where SOC shows limitations in terms of its impact.
In addition to buffering against anxiety, SOC has been shown to protect against demoralization in the context of a significant illness. Boscaglia and Clarke (2007) interviewed 120 women between 20 and 70 years old with recent diagnoses of gynecological cancer. Participants completed the questionnaires measuring demoralization and SOC. Multiple regression was performed with the subscales of the Demoralization Scale (Kissane et al., 2004) as predictor variables and SOC as the dependent variable. Demoralization is a state measure of such areas as: hope, fulfillment, purpose, guilt, regret, hopelessness, helplessness, irritability and role in life. Multiple regression was employed and results revealed that Demoralization accounted for 60% of the variance in SOC. Three of the demoralization predictors (dysphoria, sense of failure, disheartenment) each offered unique and significant contributions to the prediction of SOC. The authors concluded that SOC serves to protect against demoralization, as a strong sense of meaningfulness, comprehensibility, and manageability may buffer against the effects of demoralization following a significant stressor. The authors noted that another variable, such as coping, may further explain the relationship between SOC and demoralization and they suggested that studies should continue to explore the salutogenic benefits SOC may provide, including how SOC can be facilitated in individuals.

SOC has also been associated with adjustment after the loss of a spouse. Ungar and Florian (2004) explored what factors contributed towards middle-aged widows’ adaptation to the loss of their husband 1 to 5 years after their spouses passed away. The sample was comprised of 186 women, half of whom were widows and the remaining 93 women were married controls. Participants completed questionnaires assessing SOC, social support, stress and strain, psychological adaptation, and social adaptation. Hierarchical multiple regression analysis indicated that SOC served as the most
significant contributor in regards to mental health when entered alongside other variables such as severity of hassles, social support, marital status, and subjective health reports. In a similar vein, SOC was the most significant contributor to women’s satisfaction and interaction with family and friends as well as toward their satisfaction with leisure activities. A one-way MANOVA revealed that widows viewed life events and hassles as significantly more intense than the married group members. Additionally, widows also demonstrated significantly lower SOC, diminished mental health, and lower levels of social support in comparison to their married counterparts. Although SOC is thought to be stabilized by young adulthood, Antonovsky (1987) noted that significant stressors may impact SOC level. Ungar and Florian (2004) suggested that widows experienced lower SOC in comparison to their married counterparts because they endured a significant and traumatic loss which, in turn, negatively impacted their SOC. Thus, finding how to best maintain and facilitate resilience and SOC after a difficult loss warrants attention. Since SOC contributed towards adaptation after a death-related relationship loss, perhaps SOC may also buffer against a non-death related interpersonal loss such as a romantic relationship dissolution.

Other areas of loss in which SOC has been investigated include pregnancy loss. Engelhard, Van den Hout, and Vlaeyen (2003) explored the relationships among pregnancy loss, crisis support, posttraumatic stress disorder, and depression after a pregnancy loss. A sample of 1372 women completed measures assessing SOC and depressive symptoms in early pregnancy. These women were tracked every 2 months until 1 month after the birth due-date. Of this group of women, 126 women endured a pregnancy loss and 117 completed the measures evaluating crisis support, PTSD, and depression 1 month after the expected due date as well as the original SOC questionnaire.
Stronger SOC in early pregnancy was negatively related to symptoms of PTSD, specifically to avoidance and arousal symptoms. Likewise, SOC was negatively associated with depressive symptoms both before and after pregnancy loss, even after controlling for depressive symptoms in early pregnancy. Last, SOC demonstrated a positive association with mobilization of crisis support after the loss.

In another study exploring perinatal bereavement, Uren and Wastell (2002) explored the impact of perinatal bereavement on 108 Australian females, between the ages of 22 and 49, who had experienced a stillbirth or neonatal deaths. The researchers endeavored to explore how SOC, attachment, and meaning-making impact grief after this type of loss. Findings indicated that SOC and meaning-making were both significantly inversely correlated with perinatal grief. After employing regression analyses, SOC was found to be the strongest predictor of grief acuity (i.e., intensity of grief experienced after a loss). Thus, high SOC scores were often indicative of less intense grief experienced. Moreover, the authors noted that “the extent to which other predictor variables such as psychological distress, avoidance behavior, ruminative thoughts, and ongoing search for meaning are manifested is also a function of SOC” (pp. 303-304). Although SOC was found to be the strongest predictor of resultant grief, it should be noted that both the degree of meaning as well as the search for meaning were significantly correlated to SOC. Thus, it appears that meaning-making and SOC share commonalities. Clearly SOC affords benefits after a significant loss, such as pregnancy loss. Perhaps the benefits of SOC extend to other losses such as romantic relationship breakups.

From the numerous research studies aimed at exploring the potential benefits SOC may offer under stressful circumstances, it is apparent that SOC represents a source of resilience, particularly in regards to promoting health. However, the ways in which
SOC may promote resilience and the circumstances under which SOC affords its salutogenic benefits, warrants additional attention. Since SOC is regarded as a source of resilience, it is useful to explore how SOC level may relate to growth after a significant loss. Specifically, how does SOC relate to the concept of posttraumatic growth? A discussion of posttraumatic growth precedes a description of romantic relationship loss.

**Posttraumatic/Personal Growth**

In the present study, personal growth and posttraumatic growth are used to refer to growth following a romantic relationship loss. Although adversity may engender a myriad of difficult emotions, challenges may also serve as the impetus for personal growth. The idea of positive growth resulting from suffering is not a new concept, as Frankl (1969), along with other existential psychologists, outlined how construing meaning may alleviate distress as well as afford growth following adversity. Additionally, both Nietzsche and Kierkegaard (1983) illustrated the potential benefits individuals can accrue following their experience with painful events and subsequent suffering. Currently, the idea of surmounting challenges and trauma is conceptualized as posttraumatic growth (Tedeschi & Calhoun, 1996). Specifically, Calhoun and Tedeschi (2001) define posttraumatic growth as “gains that can result from the struggle with loss” (p. 158). Loss-related growth has been noted after significant losses such as romantic relationship breakups (Hebert & Popadiuk, 2008; Helgeson, 1994a; Tashiro & Frazier, 2003) and bereavement (Calhoun & Tedeschi, 1989-90; Neimeyer, Baldwin, & Gillies, 2006; Schwartzberg & Janoff-Bulman, 1991). Other areas associated with posttraumatic growth include: divorce, sexual assault, heart attacks, terminal illness, cancer, job loss and chronic illness (Tedeschi & Calhoun, 1995). Thus, despite encountering significant amounts of pain and adjustment, individuals who are exposed to even the most traumatic
of circumstances are able to extract something positive that has emerged from their experience.

**Posttraumatic/Personal Growth and Related Concepts**

Posttraumatic growth has been linked to other related areas of research including: resilience, sense of coherence, hardiness, stress inoculation, and toughening (Tedeschi, Park, & Calhoun, 1998). Tedeschi et al. (1998) noted that, while these areas all focus on positive outcomes after encountering stressful life experiences, these related areas do not account for how individuals’ lives are positively transformed after a trauma. Tennen and Affleck (1998) summarized personality dimensions in the growth literature and noted the following areas as having been linked with greater personal growth: dispositional optimism, cognitive and self-complexity, and dispositional hope. Furthermore, Tedeschi and Calhoun (1996) found in a study of over 600 college students reporting a recent major life stressor and completing the NEO Personality Inventory (NEO; Costa & McRae, 1985) scores for extraversion, conscientiousness, openness, and agreeableness each correlated significantly with total posttraumatic growth scores. Extraversion was the only personality dimension to be significantly correlated with each of the Posttraumatic Growth Inventory (PTGI) subscales (Tedeschi & Calhoun, 1996). Specifically, extraversion correlated most strongly with the improved relationships subscale of the PTGI. Perhaps extroverted individuals have greater access to interpersonal resources, thus enabling them to accrue more personal growth after a stressor. It seems important to consider how personal characteristics (such as extraversion) may enable one to accrue personal growth benefits. Perhaps other personal characteristics (such as sense of coherence) may also be related to individuals’ ability to experience greater personal growth after a stressful event, such as a breakup.
Assessment of Posttraumatic/Personal Growth

In regards to how posttraumatic growth transpires, Calhoun and Tedeschi (2006) explained that posttraumatic growth typically results from rumination and cognitive engagement. It is particularly interesting to note that Calhoun and Tedeschi (1995) incorporated the three elements of SOC (comprehensibility, manageability, meaningfulness) into their description of posttraumatic growth. They contended that events that are perceived as particularly disruptive compel individuals to pointedly reflect on the event and “restructure the life narrative in a way that accommodates the unanticipated event” (Calhoun & Tedeschi, 2001, p. 9). Ruminating allows individuals to make sense of their trauma and regard it as comprehensible. It seems that when individuals’ assumptions about their world are challenged they must find ways of fitting their new experiences into an existing schema or develop ways of modifying their existing conceptualizations in order to maintain comprehensibility.

The researchers also linked the SOC components of manageability and meaningfulness with posttraumatic growth as well. Specifically, they noted that individuals may realize that they do indeed possess the resources to cope with a stressor (manageability), thus reflecting posttraumatic growth. In regards to the meaningfulness component of SOC, the researchers noted that rumination/cognitive engagement produce meaningfulness through the process of reflection. This meaningfulness, in turn, yields posttraumatic growth as individuals are enabled to recognize possibilities as well as find value in their experience (Calhoun & Tedeschi, 2001). It seems that the factors inherent in SOC are also important contributors in the cognitive engagement/ruminative process associated with posttraumatic growth. Additionally, the authors note that cognitive engagement and rumination facilitate “preparedness,” as persons may be better equipped
to resist subsequent traumas since they have accrued resilience from their previous loss (Calhoun & Tedeschi, 2001). Although cognitive engagement appears to facilitate resilience after a significant loss, cognitions are not the sole source of facilitating posttraumatic growth. Emotions, personality variables, distress, socio-cultural factors, wisdom, etc. should be considered as influential in growth as well (Tedeschi, Calhoun, & Cann, 2007). It is important to note that while posttraumatic growth reflects a positive aspect associated with undergoing a significant loss, individuals still will likely experience significant distress resulting from their circumstances as well. Thus, posttraumatic growth and distress can and, quite often, do coexist following a personal crisis (Calhoun & Tedeschi, 2001; Tedeschi, et al., 2007).

In order to assess posttraumatic growth, Tedeschi and Calhoun (1996) developed the Posttraumatic Growth Inventory (PTGI) which was designed to measure positive changes that result after a significant loss. The researchers administered a scale of 21 items to 604 American undergraduate students who had undergone a range of traumatic events within the past 5 years including: bereavement, accidents resulting in injury, separation or divorce of parents, relationship breakups, criminal victimization, academic issues, and unwanted pregnancy. After a principal components analysis was performed, the five factors that emerged were: appreciation of life, relating to others, personal strength, new possibilities, and spiritual change (Tedeschi & Calhoun, 1996). Thus, when considering the ways in which individuals accrue personal growth after a stressful event, it is important to examine the five aforementioned factors. A more detailed review of the PTGI can be found under “Instrumentation” in Chapter III. Another measure purported to measure posttraumatic growth is the Stress-Related Growth Scale (Park, Cohen, & Murch, 1996), which has also been normed on college students. One distinct
advantage of the PTGI in comparison to the SRGS is that the PTGI is multidimensional and allows for use of subscale scores (Tedeschi & Calhoun, 1996). Conversely, the SRGS illustrates the existence of one major factor; thus, only use of total scores for the SRGS is supported (Cohen, Hettler & Pane, 1998). Additionally, the PTGI is preferred due to its brevity of at 21 questions versus the 50 questions comprising the SRGS.

In addition to reviewing how posttraumatic growth occurs as well as how it is measured, it is helpful to review the broad domains in which growth is typically observed. Tedeschi and Calhoun (1995, 1996) noted that posttraumatic growth typically manifests in three broad areas: sense of self, changed relationships, and changed philosophy of life.

**Sense of Self**

After negotiating a significant stressor, individuals may feel a stronger sense of self. Calhoun and Tedeschi (2001) noted that persons often experience an increased sense of vulnerability after a loss, which may translate into an increased appreciation for life and its fragility. Moreover, individuals may estimate their strength to be greater than they ever imagined, possessing the mentality of “if I can survive this, I can survive anything.” Thus, they have survived the worst circumstances they could possibly fathom and have still retained some sense of purpose, meaning, and perhaps a stronger sense of self. For instance, Collins, Taylor, and Skokan (1990) found that the most common positive change persons with cancer reported involved feeling like a stronger individual and feeling more self-confident. Tedeschi and Calhoun (1996) suggested that this sense of self-assurance may generalize to a multitude of situations, including coping with future traumas. Thus, although individuals may experience vulnerability and confusion after surviving a significant adversity, “persons also report the emergence of new
possibilities in life, developing new interests, new activities, and perhaps embarking on significant new paths in life” (Calhoun & Tedeschi, 2006, p. 5). Perhaps significant stressors (i.e., relationship breakups) provide the impetus for individuals to reflect upon their own assets as a person as well as find meaning and strength after experiencing such a loss.

**Changed Relationships**

Posttraumatic growth is not only limited to positively altering individuals’ sense of self; rather, interpersonal relationships may improve following a crisis as well. Calhoun and Tedeschi (2001) noted that tragedy may facilitate greater connections among individuals, as persons may feel greater compassion towards others who have suffered. Thus, adversity may instill afflicted persons with a greater sense of empathy for others who are enduring challenges. Other positive relational consequences include: increased self-disclosure, a greater sense of intimacy, increased freedom in being oneself, and an enhanced ability to emotionally connect with others (Calhoun & Tedeschi, 2001, 2006; Tedeschi & Calhoun, 1995, 1996). Thus, loss and tragedy may underscore the importance of individuals’ social support networks and may provide individuals with an opportunity to both mobilize as well as more deeply appreciate their interpersonal connections.

**Changed Philosophy of Life**

In addition to restructuring people’s sense of self and interpersonal relationships, the triumph over loss may also impact individuals’ perspectives on life. Calhoun and Tedeschi (2006) maintained that individuals may alter their perceptions about what they believe is essential and important. Thus, people may reevaluate their investments and adjust their priorities accordingly. Persons may experience a transformation in terms of
spirituality and existential concerns as well (Calhoun & Tedeschi, 2001; Tedeschi & Calhoun, 1996). According to Calhoun and Tedeschi (2006), “the experiences that comprise this domain tend to reflect a greater sense of purpose and meaning in life, greater satisfaction, and perhaps clarity with the answers given to the fundamental existential questions” (p. 6). Thus, the ability to construe meaning after a crisis may facilitate as well as reflect posttraumatic growth.

Several research studies have investigated how this meaning-making process contributes towards personal growth and adjustment after enduring a significant stressor, particularly a loss (Baarnhielm, 2004; Currier, Holland, & Neimeyer, 2006; Davis & McKearney, 2003; Gillies & Neimeyer, 2006; Jim, Richardson, Golden-Kreutz, & Andersen, 2006; Neimeyer et al., 2006; Schwartzberg & Janoff-Bulman, 1991). Janoff-Bulman (1992) described in Assumptive World Theory how significant losses can shatter a person’s “assumptive world,” thus underscoring the necessity of meaning-making. Essentially, this theory contends that growth results when individuals engage in rebuilding their shattered assumptions, often through the process of making sense and meaning of the loss. Janoff-Bulman stated:

By engaging in interpretations and evaluations that focus on benefits and lessons learned, survivors emphasize benevolence over malevolence, meaningfulness over randomness, and self worth over self-abasement. Such interpretations are extremely important components in the successful rebuilding of nonthreatening assumptions, and contribute significantly to the resolution of the survivor’s existential dilemma (pp. 132-133)

As previously outlined, one personal resource that has been noted in facilitating individuals’ ability to construe meaning as well as effectively adapt after a loss is SOC (Antonovsky, 1987). Thus, it is critical to explore how SOC is linked with posttraumatic growth and adjustment after a significant loss. One area that the current study endeavors to explore in more depth involves the connections among SOC and adjustment after a
breakup. Do persons who have experienced a recent relationship breakup regard their circumstances as explicable and somewhat predictable (indicating high SOC) or do they perceive these dissolutions as baffling and chaotic (indicating low SOC)? Also, what are the relationships among SOC, posttraumatic growth, and stress reactions following a romantic relationship termination? The current research study intends to explore not only the negative consequences of a breakup, but also potential areas of growth individuals experience subsequent to this loss.

**Posttraumatic/Personal Growth and Relationship Breakups**

There is a dearth of research studies that have highlighted positive growth and reactions after a relationship loss (Helgeson, 1994a; Hebert & Popadiuk, 2008; Tashiro & Frazier, 2003, Sprecher et al., 1998). It seems that the personal growth individuals report post-breakup may have important implications for their future relationships. For instance, the insights individuals accrue during a breakup may assist them with how they relate in future relationships. Perhaps individuals are better equipped to deal with relationship stressors as well as recognize what they desire in a romantic partner. Thus, this area warrants continued exploration. Since part of the focus of the current study entails examining personal growth that may emerge after a romantic relationship loss, it is helpful to review the few research studies that have specifically focused on this area of inquiry.

Hebert and Popadiuk (2008) used a grounded theory approach in exploring college students’ breakup experiences. This study investigated the breakup experiences of 11 undergraduate college students. Employing a semi-structured interview format, the investigators discovered various ways in which college students experienced personal growth after a breakup. After exploring participant narratives, several positive changes
post-breakup were noted. Participants reported 69 changes as a result of their breakup, with 64 of these changes deemed as positive. The most common positive changes reported included: learning something relevant for future relationships, gaining inner strength and resilience, feeling independent and pursuing new interests/opportunities, developing maturity and deeper self-awareness, and changing priorities. “Negative” aspects of the breakup included: worrying about finding a new partner and developing trust with a new partner. Additionally, this study outlined 3 different phases individuals work through after a breakup. These phases included: experiencing the loss, pulling apart, and moving beyond. After breaking down participant experiences into phases, several important discoveries were noted within each phase. One important finding reflected how initiators versus recipients responded to the breakup. Initiators often grieved before the end of the breakup, while recipients began their grieving at the time of the breakup. Other findings indicated that those experiencing breakups reported a myriad of emotions including feelings of hurt, aloneness, anger, and sadness. In regards to coping strategies employed, participants reported that they refrained from thinking about the breakup or tried to make sense and meaning out of the breakup. Thus meaning-making was regarded as an important coping strategy. Additionally, participants noted that having contact with their ex-partner post-breakup tended to impede their coping efforts as well as their ability to “move on.” Clearly this study underscores the relevance of exploring personal growth after a breakup as well as the importance of meaning-making as a post-breakup coping strategy.

While Hebert and Popadiuk (2008) explored relationships breakups in a qualitative study, another study explored breakups employing a quantitative design. Helgeson (1994a) investigated college students’ experiences following the dissolution of
long-distance romantic relationships. Ninety-seven college students were followed over the course of one semester to determine whether sex differences were present in regards to the physical separation (long-distance) aspect of the relationship as well as the adjustment post-breakup. The majority of these individuals were first-year students. The length of their relationships spanned from several weeks to slightly over 5 years, with the average relationship duration being 13 months. Participants were assessed at the beginning of the semester and 3 months later when the semester ended. Initially they were asked to provide information about their relationship interdependence (amount of contact, length of relationship) as well as complete an instrument assessing psychological distress including anxiety, depression, and hostility. At the end of the semester the participants completed the same measure assessing psychological stress as well as how they adjusted to the physical separation. Adjustment to separation reflected such areas as: positive gains, difficulty of emotional adjustment, duration of distress, and questions inquiring about partners’ consideration and discussion of breaking up during separation. If applicable, adjustment to relationship breakup was assessed as well. Adjustment to breakup reflected such areas as: positive gains, difficulty of emotional adjustment, duration of distress, perceptions about initiator status, and comparisons of personal breakup experience to those of their peers.

During the second assessment, participants responded to an instrument inquiring about their current emotional state as well as questions assessing their functioning. Functioning was measured by asking participants to rate the extent to which the breakup interfered with 10 academic and social activities such as attending class, interest in socializing, and exam performance. Results indicated that individuals were able to perceive benefits after a breakup. Specifically, women noninitiators endorsed more
positive attributions after a breakup in comparison to men. Furthermore, among noninitiators, women endorsed significantly more positive emotions post-breakup in comparison to men. Although negative emotions and difficulties with adjustment after the breakup were noted, this study provided support for posttraumatic growth, in that individuals were able to identify positive gains they experienced as a result of the breakup. A more detailed review of difficulties the participants experienced post-breakup will be outlined in the following section entitled romantic relationship dissolutions.

In addition to Helgeson (1994a), Tashiro and Frazier (2003) explored personal growth following a romantic relationship dissolution. Ninety-two undergraduates who had experienced a heterosexual breakup over the past 9 months participated in the study. Participants were asked to “briefly describe what positive changes, if any, have happened as a result of your breakup that might serve to improve your future romantic relationships.” Responses were coded as Person, Other, Relational, or Environmental positive changes. Additionally, the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) was employed to assess stress-related growth. Other areas assessed included: level of distress, attributions about cause of breakup, perceptions about initiator status, and personality.

In regards to personal growth, results indicated that individuals were able to extract positive aspects associated with their breakup. For instance, they realized they could handle life on their own, they recognized what they did not want in a romantic partner, they possessed a greater awareness of the importance of friendships and support systems, and they learned relationship skills and communication that could be applied to future romantic endeavors. The most common response involved Person positive
changes reflecting increased self-confidence, emotional strength, and independence. Women reported significantly more growth in comparison to men. Additionally, the personality factor of agreeableness was associated with more personal growth as well. Regression analyses regressing PTGI scores on attributions about cause of breakup revealed that attributing breakup to environmental factors was associated with more growth than if individuals attributed the cause of the breakup to themselves. Thus, it seems that when individuals did not internalize the cause of the breakup to personal variables, they were more likely to experience growth. Furthermore, in the regression equation with PTGI scores as the criterion, attributions accounted for a significant amount of the variance in growth. Therefore, exploring attributional style seems important. Since SOC reflects attributions and appraisals of events, it seems important to explore how this resilience resource may impact growth following a breakup. In order to understand how SOC may positively relate to growth and adjustment after a relationship breakup, it is essential to understand the challenges presented to partners enduring a relationship breakup.

**Romantic Relationship Dissolutions**

Romantic relationship dissolutions are arguably among one of the most difficult losses individuals encounter throughout their lives. Who among us is not familiar with the heartbreak that ensues when the hopes invested in a relationship, as well as companionship experienced, are lost? Individuals must cope with losing an important person in their lives, the potential interpersonal rejection and self-esteem concerns that a breakup may highlight, as well as adjusting to being single. In order to understand the significance of relationship breakups on young adults, several research studies detailing
the emotional impact of these dissolutions are outlined. Additionally, implications for SOC are noted as well.

Specific factors associated with distress post-breakup have been explored in the literature. For instance, Sprecher et al. (1998) explored the following areas as potential correlates of breakup distress: conditions at time of breakup, individual difference factors, variables associated with initiation of the relationship, and characteristics of the relationship while intact. Participants included 257 young adults (mostly college students) who had experienced a breakup within the past year. Initial distress was measured via participants' responses to a general initial distress questions as well as to items inquiring about the degree to which they experienced a certain emotion post-breakup. Emotions included depression, guilt, anger, hate, frustration, resentment, loneliness, jealousy, and hurt. Positive emotions included relief, satisfaction, happiness, love, and contentment. Current distress was measured as well by asking individuals to rate their degree of upset. Results revealed that the nine negative emotions were experienced to a greater degree in comparison to the positive emotions. Additionally, participants scored higher on initial distress than current distress. Those who perceived greater involvement in initiating the start of the relationship as well as those who perceived themselves to be recipients of the breakup were more inclined to feel greater distress when the relationship ceased. Also, those individuals who believed that their partner had more alternative partners available to them reported more initial distress. Relationship duration was linked to distress as well, as those involved in longer unions experienced more distress. It should be noted that time since the breakup had no effect on the initial level of distress reported, suggesting that how people recall their distress is not affected by time.
Frazier and Cook (1993) have also investigated correlates of distress following a relationship breakup. Participants included 85 college students who experienced a breakup within the previous 6 months. These individuals completed measures assessing commitment-related variables, controllability, social support, self-esteem, and distress in regards to their relationship loss. Perceived controllability, social support and self-esteem were significantly related to both initial and current distress. Those expressing a sense of control regarding the breakup were better adjusted. Since SOC reflects perceptions of control, it seems useful to explore how this resource may bolster adjustment and alleviate distress following a breakup. After employing hierarchical regression to determine whether perceptions about controllability, social support, and self-esteem added to the prediction of initial distress once commitment-related variables were taken into account, results indicated that perceived controllability and self-esteem were significant individual predictors. Social support was linked to recovery after the breakup but not to initial distress. In general, those who still wanted to be in the relationship, perceived the breakup as uncontrollable, and those who possessed low self-esteem reported more current distress and adjustment difficulties. Results also indicated that perceiving fewer alternative partners was related to initial distress but not to current recovery. Interestingly, those who indicated having a longer-lasting relationship reported better current adjustment than those of a shorter duration. Perhaps individuals were able to extract valuable insights from that long-term relationship, which may have facilitated personal growth thus reducing their distress. The current study intends to explore these potential relationships in further depth. In regards to areas the authors suggested pursuing, they recommended that future research examine cognitions about a particular relationship and subsequent breakup, including attributions about the breakup. SOC
seems particularly applicable, as this disposition can provide information about individuals’ attributions of events.

Perceptions of control as well as emotional responses have also been explored by other researchers (Helgeson, 1994a; Sprecher, 1994). Sprecher (1994) examined breakup experiences from both partners involved in a romantic relationship breakup. Data were collected from 60 heterosexual couples who indicated experiencing a breakup over the course of 4 years; however, only 47 couples had both partners who completed the questionnaires. The total sample consisted of 105 participants, as data from the 47 couples were included as well as data from 11 individuals who completed the questionnaires but whose partners did not. The majority of these individuals were college students and most defined their relationship status as “seriously dating.” The average age was 22. Participants were contacted 6 months after completing an initial question about their relationship and then participated in yearly follow-ups for a period of 3 years. Couples who reported ending their relationship completed a questionnaire assessing positive and negative emotional reactions post-breakup, control over the breakup, and reasons for the breakup. Respondents reported experiencing negative emotions to a greater extent with hurt, frustration, loneliness, and depression most commonly noted.

In regards to positive emotions, love and relief were most frequently reported. The effect of time on recall of emotions was examined by correlating length of time since breakup with each emotion and with the three emotion indices (Positive, Negative, Overall Distress). Recall of emotions was found to be independent of time since the breakup. In regards to partner differences, the greater one partner experienced a certain emotion, the less his or her partner experienced the same emotion. Gender differences
were present for positive emotions, as women reported significantly higher scores. This was most notable in regards to happiness, contentment, and satisfaction.

Partners shared similar perspectives regarding who had control over the breakup; however, they did not share similar feelings regarding this control. If one partner indicated that he or she initiated the breakup or was more responsible for problems contributing to the breakup, the other partner tended to feel less control. Also, the person being left tended to feel more distress and experienced fewer positive emotions in comparison to the person initiating the breakup. Although there was a tendency towards partner agreement regarding perspectives on control, gender differences were noted. Females were more likely to perceive themselves as the initiator of the breakup, but only by females themselves, as their male partners/counterparts were about as likely to view themselves as the initiator as they were to view themselves as the recipient of the breakup. Thus, males’ and females’ perceptions about who initiated the breakup were not always complementary/consistent with their partner’s perceptions. For example, in a partner pairing, a female participant might regard herself as the initiator of the breakup while her male partner (also a participant in the study) might also perceive himself as the initiator of the same relationship breakup or might regard the breakup as mutual. Women also tended to attribute more blame to their partner for problems leading to the eventual breakup. Men were more likely to feel guilty if they perceived themselves to be responsible for the breakup. The authors suggest that future studies explore both positive and negative reactions after a relationship dissolution. The current study addressed this concern, as it focused on both personal growth as well as stress reactions after the unraveling of a romantic relationship.
As previously mentioned in the section entitled “Posttraumatic Growth,” Helgeson (1994a) explored college students’ experiences with long-distance relationship breakups. Results indicated that an interaction among sex, relationship status (broken up vs. together) and global distress was significant. Specifically, at the end of the semester men reported more distress than women if their relationship was no longer intact. Likewise, women reported better adjustment post-breakup in comparison to men. Interestingly, women who remained with their partners at the end of the semester reported more distress in comparison to men who had remained with their partners. In regards to initiator status, there was a tendency for women to report having had more initiative in the breakup. Noninitiator status led to worse adjustment among males, but noninitiator status did not negatively impact females’ adjustment. Additionally, female noninitiators reported significantly more positive emotions in comparison to male noninitiators after the breakup. The researchers hypothesized that men fared worse after the breakup because, perhaps, the men relied more heavily upon their romantic relationships for support. Thus, when these relationships dissolved, the emotional impact was more pronounced for men. The authors suggested that future studies focus on perceptions about control regarding the breakup, as appraisals about possessing control may facilitate coping. Since SOC involves appraisals about control (as manifested in comprehensibility and manageability), it seems important to explore how this resilience resource may impact adjustment.

Helgeson (1994b) conducted another longitudinal exploration of college students involved in long-distance romantic relationships. Specifically, positive self-beliefs, positive relationship beliefs, relationship status at the end of the semester (after 3 months), adjustment to relationship stressor, and adjustment to breakup were assessed.
Additionally, psychological distress (depression, hostility, anxiety, physical symptoms) was assessed at the beginning of the study and at the end of 3 months. Self-beliefs consisted of self-esteem, perceived control, and dispositional optimism. Relationship beliefs included: relationship self-esteem, relationship optimism, control or mastery over the relationship, and relationship enhancement. The relationship stressor was defined as adjustment to physical separation from their partner, as the relationships were long-distance unions. In order to assess adjustment to breakup, participants were asked questions about how they had emotionally adjusted to the breakup, the extent to which they felt either they or their partner initiated the breakup, and whether they had been able to extract anything positive or valuable from the dissolution. Their functioning was also assessed to determine whether the relationship cessation had interfered with activities such as socializing, studying for exams, extracurricular events, etc. Results indicated that individuals who held more positive relationship beliefs prior to their union dissolving actually experienced greater distress when their relationship terminated. Thus, it seems that individuals who had higher expectations that their relationship would last, were ultimately more disappointed when it did not since their expectancies were not fulfilled. Perhaps the dissolution disrupted aspects of their SOC; thus, the breakup may not have been perceived as comprehensible since this dissolution did not align with their prior assumptions. Might SOC have been a factor that buffered the experience of distress among those endorsing high relationship expectations? The current study intends to explore how adjustment after a relationship dissolution may be influenced by SOC.

**Relationship Breakup Demographic Information**

In addition to reviewing the breakup literature in general, it is important to explore how certain personal/relationship characteristics may relate to post-breakup
adjustment. The following personal/relationship characteristics have received attention in the literature as potentially impacting adjustment after a relationship breakup: breakup timeline, relationship length, initiator status, and sex of participant.

**Breakup timeline.** The time elapsed since the relationship terminated may be an important factor in recovery from breakup heartache, as time has been positively correlated with the belief that a romantic relationship is over (Sorenson et al., 1993). While not statistically significant, passage of time was identified as one of the most helpful factors in college students’ recovery from a breakup (Knox et al., 2000). In another study, Moller et al. (2003) reported that timeline was a significant predictor of distress and loneliness for college students enduring a breakup within the past year. In an exploration of factors associated with distress post-breakup, Sprecher et al. (1998) noted that the less time elapsed since the breakup, the more distress brokenhearted college students endured. While research has supported the relevance of timeline in impacting distress post-breakup, other research has contradicted these findings. For instance, Kaczmarek et al.’s (1990) findings revealed that the recency of the loss was not a significant moderator variable in adjustment post-breakup (as measured by “depressed” and “not depressed”). Fewer people were depressed immediately following the relationship termination as compared with those who had indicated more time had elapsed since breakup. Perhaps those who recently loss someone were in denial. Thus, differences in distress would not be expected if more recently broken up persons denied their distress. Additionally, Tashiro and Frazier (2003) noted that breakup timeline was not significant in predicting distress and personal growth. Or, perhaps, time passed since the breakup is, in fact, irrelevant by itself in relation to personal growth. This notion has been supported in a meta-analysis of personal growth/benefit finding after experiencing a
significant stressor. Weinrib, Rothrock, Johnsen, and Lutgendorf (2006) found that passage of time was unrelated to personal growth across a multitude of various stressful events, including relationship breakups. Thus, the present study continued to explore the relationship between distress and personal growth experienced after a relationship breakup.

**Relationship length.** Relationship length has also been considered in regards to post-breakup adjustment. For instance, relationship duration has been found to be one of the best predictors of emotional distress following a breakup (Simpson, 1987). Kaczmarek et al. (1990) found that college students endorsed greater depression and difficulty post-breakup if their relationship had been of a longer duration. In support, Sprecher et al. (1998) found that the longer the relationship, the more distress and difficulty with adjustment brokenhearted college students reported. These studies lend credence to the idea that a longer relationship entails more investment and, subsequently, more loss post-breakup. However, other research has contradicted the positive correlation between relationship length and post-breakup distress. For instance, Frazier and Cook’s (1993) findings revealed that the longer the relationship duration, the better the adjustment. These findings seem counterintuitive, as one might expect that a longer relationship would be more difficult to “get over” in comparison to a shorter relationship. In addition to finding relationship length both positively correlated with distress and inversely correlated with distress, other research has found relationship duration not predictive of distress (Fine & Sacher, 1997). The present study attempted to explore the contributions of relationship length to post-breakup distress as well as post-breakup personal growth.
**Initiator status.** According to several research studies, an important determinant of adjustment post-breakup in college student nonmarital relationship dissolutions involves who initiated the breakup. Hill et al. (1976) discovered that “both women and men felt considerably less depressed, less lonely, freer, happier, but more guilty when they were the breaker-uppers than when they were the broken-up-with” (p. 158). As noted in Frazier and Cook (1993) perceptions about controllability after a negative life event may be related to the perceived stressfulness of that event. Those who regard a negative life event as uncontrollable are more inclined to experience greater distress than persons who possess a sense of control related to the stressor. In support, Kaczmarek et al. (1990) found that college students were more depressed when they perceived that the breakup occurred suddenly, as opposed to having anticipated the relationship’s termination. Furthermore, Sorenson et al.’s (1993) study exploring college student perceptions post-breakup revealed that individuals who felt they had more control over their recovery process were more likely to have felt that their relationship was psychologically over, thus resulting in less distress. Having a complete account, which entailed working through emotions and thoughts as a way of making sense of the breakup, was significantly impacted by who initiated the breakup. Greater account completion was reported by initiators. Thus, a person with a complete account would have a solid understanding of why the relationship ended. It can be conjectured that persons who are the recipient of a breakup might experience more distress due to thwarted account-making and perceived uncontrollability. Conversely, those who initiate the breakup might feel a greater sense of control regarding the breakup process, as they are less inclined to be “caught off guard.” They may be in a better position to engage in account making, thus leading to a sense of closure and having “moved on.”
Research has supported the relevance of initiator status, as Hill et al. (1976) found that both males and females adjusted better if they had initiated the breakup. Additionally, Sprecher (1998) found that noninitiators reported greater distress post-breakup. Similarly, Pistole (1995) noted that college students indicated more negative experiences if the partner had initiated the breakup. Likewise, Robak and Weitzman (1998) reported that, if a breakup was initiated by the partner, recipients were more inclined to have intense feelings of loss and grief both at the onset of the breakup and later. In further support, Davis et al. (2003) reported that those college students whose partners had initiated the breakup endorsed greater physical/emotional distress but less guilt. Fine and Sacher (1997) expounded on this concept by exploring sex differences in regards to initiator status. Results indicated that males were more distressed when they perceived that they had not initiated the breakup. In a similar vein, Helgeson (1994a) investigated the relationship between sex and initiator status among college students experiencing the breakup of a long-distance nonmarital relationship. Results indicated that males fared better post-breakup if they had initiated the breakup, yet females tended to be the initiators. Furthermore, males endorsed fewer positive contributions after the breakup if the partner initiated. Initiator status did not significantly impact females’ adjustment post-breakup to the degree that males were impacted. Considering that literature has suggested males may respond more intensely to a breakup, particularly when initiated by their partner, it is important to note that several studies found females more likely to have initiated the breakup (Helgeson, 1994a; Knox et al., 2000; Robak & Weitzman, 1998; Sprecher, 1994, Sprecher et al., 1998). Thus, not only are males prone to react more intensely to a breakup when initiated by their partner, but they are also more likely to be the recipient of the breakup.
While the aforementioned research has supported the importance of initiator status in breakups, it should be noted that other research has found that initiator status was not a significant factor in distress or personal growth post-breakup. Specifically, Tashiro and Frazier (2003) found no significant interaction between sex and initiator status, initiator status and personal growth, and initiator status and distress relative to college students' breakup experiences. Since the relevance of initiator status has been both supported and repudiated in the extant literature, the present study examined whether initiator status was significantly related to the personal growth and distress endorsed post-breakup.

**Sex of participant.** Research has been somewhat inconclusive regarding which sex struggles more post-breakup. For instance, Moller et al. (2003) noted that sex of participant was, in general, not a significant predictor of overall emotional functioning (as measured by hopelessness, perceived stress, symptomatology, and loneliness). In other studies of dating couples, results have indicated that males were more distressed post-breakup (Helgeson, 1994a; 1994b; Hill et al., 1976) while other research has indicated that females are more distressed at initial time of breakup (Sprecher et al., 1998) as well as more severely depressed both at initial breakup and at the time of inquiry (Mearns, 1991). Conversely, other studies found no significant sex differences in regards to distress (Kaczmarek et al., 1990; Moller et al., 2003; Pistole, 1995; Robak & Weitzman, 1998; Simpson, 1987; Sprecher, 1994; Tashiro & Frazier, 2003). Still another study found both similarities and differences among the sexes. Specifically, Robak and Weitzman (1994-95) reported that male and female college students experienced similar levels of distress, as the amount of time it took them to “get over” the breakup was comparable. Differences in distress responses for males and females were noted within
the same study, as women endorsed greater death anxiety and more feelings reflecting loss of control. Men, on the other hand, reported greater denial of feelings.

Choo et. al (1996) found that, while males and females did not differ in their reports of “feeling bad” post-breakup, men were less likely to report “positive” feelings of joy or relief after the breakup. In a similar vein, other research has supported similarities between the sexes in regards to distress, while also noting sex differences in regards to personal growth. For instance, Tashiro and Frazier (2003) investigated personal growth and distress college students endorsed following a romantic relationship dissolution. Results indicated that women reported more personal growth. The present study attempted to expound upon the literature by exploring the relationship between sex and distress and sex and personal growth following a relationship breakup.

Summary
As described in this chapter, SOC refers to a dispositional resilience resource that enables individuals to select appropriate and effective coping strategies in dealing with stressful circumstances. Thus, development of a strong SOC may buffer individuals from the intensity of distress presented by many life circumstances. Although SOC has been explored in regards to various types of losses, the potential benefits of this construct have not been documented in regards to romantic relationship dissolutions. Additionally, since research on relationship breakups has primarily focused on distress as opposed to the growth that may ensue, exploring areas of posttraumatic growth is warranted.

Breakups often create a host of both positive and negative emotions; thus, it is valuable to explore distress and personal growth since these variables can, and often do, coexist. Additionally, since various personal and relationship variables (breakup timeline, relationship length, initiator status, sex of participant) have been investigated in regards
to relationship breakups, exploring the relative contributions of each in regards to post-breakup adjustment is important. Based on the literature review of SOC, posttraumatic growth, and relationship breakups it is evident that all three areas offer opportunities for continued scientific inquiry. Chapter III describes the methodology that was implemented in order to examine the relationships among these domains.
CHAPTER III

METHODS

Study Purpose and Design

The purpose of this study was to explore the connections among sense of coherence (SOC), personal growth, and distress experienced after a nonmarital romantic relationship dissolution in a college-age population. Additionally, the study explored the relative importance of the meaningfulness SOC subscale in contributing significant unique variance toward explaining personal growth and distress experienced post-breakup. The researcher anticipated that the results would highlight the relevance of SOC in facilitating adjustment after a romantic relationship breakup. This study adds to the existing knowledge base by identifying how SOC relates to adjustment after a breakup. Also, since most studies have focused on distress rather than on exploring the potential personal growth individuals may experience post-breakup, this study offers a broader understanding of both the positive and stressful reactions individuals typically experience after a relationship breakup.

Addressing the aforementioned areas required a quantitative design since the goal involved exploring the relationship among varying levels of SOC with varying levels of personal growth and distress. This chapter describes the research methodology of the study including: the participants, the instruments utilized as well as the psychometric properties associated with each measure, recruitment procedures employed, and data analysis utilized.

Participants

Participants included in the present study were college students who had experienced a nonmarital relationship breakup within the past 2 years. The final sample
consisted of 150 participants. A total of 151 college students completed survey packets for this study, although one respondent’s data was omitted due to not fitting study criteria. Using the G power program, the researcher determined that the present study required a sample of at least 138 participants to achieve a power of 95% for both correlation and multiple hierarchical regression (Faul, Erdfelder, Buchner, & Lang, 2009). Thus the sample size of 150 in the current study was considered to be sufficient.

Demographic information collected from participants indicated that 67.3% (n=101) were female and 32.7% (n=49) were male. The ages of participants ranged from 18 to 50, with a mean age of 21.57 years (SD=4.78). The age range of 18-22 accounted for 74% (n=111) of the sample. A majority of the participants (82%) identified as White, not of Hispanic origin, followed by African-American/Black (7.3%), and Hispanic (4%). Sexual orientation was predominantly heterosexual, 96.7% (n=145). Most students had undergraduate student status (n=119) and, of these undergraduates, 40.3% (n=48) were in their first year of college. Graduate students comprised 20.7% (n=31) of the sample. Of these graduate students, the majority of them (77.4%) reported being in either their first or second year of their graduate program. A table illustrating these demographic statistics is presented in the results section (see Table 1). Additionally, demographic information related to participants’ breakup experiences will be outlined in the results section as well.

Instrumentation

The following instruments were utilized in this dissertation in an effort to explore the relationships among Sense of Coherence, distress, and personal growth that college students endorse after experiencing a nonmarital romantic relationship termination: the Demographic Information Questionnaire, the Orientation to Life Questionnaire
(Antonovsky, 1987), the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), and the Impact of Event Scale (Horowitz et al., 1979).

**Demographic Information Questionnaire**

The Demographic Information Questionnaire (see Appendix A) consisted of 15 questions inquiring about basic demographic information (i.e., sex, age, race) as well as information relevant to an identified breakup. Thus, in addition to eliciting basic demographic information, the instrument also inquired about participants' specific relationship breakups including: the perceived impact of the breakup on the participant, the type of union (same-sex or heterosexual), time elapsed since the breakup, length of the relationship prior to its termination, identification of who initiated the breakup, number of partners participant dated since the breakup (if any), the time elapsed before beginning to date a new partner, and whether the participant engaged in formal counseling to address concerns post-breakup. Participants were also invited to provide additional qualitative information about their breakup experience in a comments section.

**The Orientation to Life Questionnaire**

Sense of Coherence (SOC) was measured using Antonovsky’s (1987) Orientation to Life Questionnaire (OLQ). This instrument is a 29-item questionnaire which measures three interrelated components of SOC: comprehensibility (11 items), manageability (10 items), and meaningfulness (8 items). Comprehensibility refers to the degree that individuals believe information about themselves and their environment is ordered, understandable and consistent. Manageability reflects individuals’ perceptions about the availability of resources to sufficiently cope with the demands of both internal and external stimuli. Meaningfulness refers to the extent to which individuals regard their stressors as worthy of investment, effort, and time (Antonovsky, 1993). Items are rated
on a 7-point Likert scale, resulting in scores ranging from a low of 29 to a high of 203. Each question has a “low” response and a “high” response anchor; however, anchors for items vary based on the particular question and are not always anchored low to high in order to avoid a response set bias. For instance, responses of “1” are not necessarily indicative of a “low” score for a particular item and responses of “7” are not always associated with a “high” score for a particular item. Scores that are anchored high to low (rather than low to high) on the instrument are ultimately reverse-scored when calculating the total score.

Examples of questions and corresponding anchors include the following: When you talk to people, do you have the feeling that they don’t understand you (1=Never, 7=Always); Does it happen that you have the feeling that you don’t know exactly what’s about to happen? (1=Very often, 7=Very seldom or never); Life is: (1=Full of interest, 7=Completely routine); Has it happened that people whom you counted on disappointed you? (1=Never happened, 7=Always happened); Doing the things you do every day is: (1=A source of deep pleasure and satisfaction, 7=A source of pain and boredom); and You anticipate that your personal life in the future will be: (1=Totally without meaning and purpose, 7=Full of meaning and purpose). SOC scores are obtained by summing all 29 items, with 13 of the 29 items requiring reverse scoring. SOC is typically interpreted using the total score, rather than making interpretations based on the individual subscales. High total scores on this measure are indicative of a stronger sense of coherence. For each of the SOC components, examples of instrument questions are offered. An example of a question reflecting comprehensibility is: In the past ten years your life has been: (1=Full of changes without your knowing what will happen next, 7=Completely consistent and clear). Manageability items consisted of an item such as:
In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it: (1=Surely wouldn’t get done, 7=Surely would get done).

Finally, meaningfulness was assessed with an item such as: Most of the things you do in the future will probably be: (1=Completely fascinating, 7=Dead boring) (Antonovsky, 1987).

Antonovsky did not define boundaries for a “normal” SOC score. Rather, he described SOC in terms of high and low scores, but did not outline definitive criteria for determining a “high” versus a “low” score. High scores and low scores depend on the sample from the data that is being gathered (norm-referenced), as opposed to having a specific criterion indicating “high” versus “low” scores (criterion-referenced).

Antonovsky (1987) recommended that the SOC concept be explored without dividing the sum into low or high values. Consequently, he never defined a “normal” SOC value. While several studies have grouped participants’ scores into various divisions, a general consensus about what constitutes “high,” “moderate” or “low” SOC does not exist. Rather, different researchers have used different groupings of SOC in their studies (Amirkham 2003; Cederblad, Pruksachatkunakorn, Boripunkul, Intraprasert, & Hook, 2003; Jorgensen, Frankowski, & Carey, 1999; Poppius, Tenkanen, Kalimo, & Heinsalmi, 1999; Svartvik, Lidfeldt, Nerbrand, Samsiö, Scherstén, & Nilsson, 2000). Since consensus among researchers regarding SOC groupings is not available, this researcher adhered to Antonovsky’s recommendation of exploring SOC in general. Thus, the researcher eschewed categorizing scores specifically into high, moderate, or low divisions. Instead, the researcher focused on how “higher” versus “lower” scores correlated with measures of personal growth and distress.
It should be noted that abbreviated versions of the Orientation to Life Questionnaire, consisting of 13 (Antonovsky, 1993) and 3 questions (Lundberg & Nyström, 1995), respectively, were introduced. The 29-item questionnaire was selected for the present study since most studies have used the 29-item questionnaire and the researcher wanted to be able to draw comparisons with the extant literature.

In constructing this scale, Antonovsky interviewed 51 individuals who met the following criteria: (1) the person was known to have undergone severe trauma and (2) the person was thought by others to be functioning remarkably well. These individuals ranged in age from 21 to 91, except for four teenagers. Thirty were men and 21 were women. The population was heterogeneous in terms of family status and occupation, although all respondents identified as Jewish. Using a ten-point scale of strong to weak SOC, individuals were classified into strong, moderate, and weak categories. Antonovsky then searched for commonalities within each group as well as differences among various levels of SOC to determine how the respondents experienced and perceived various aspects of life. The results of repeatedly testing this questionnaire, studying the response distribution and correlation matrices, discriminant powers test, and smallest-space analysis resulted in a 29-item questionnaire, with comprehensibility, manageability, and meaningfulness resulting as the three SOC subscale components (Antonovsky, 1987).

It should be noted that the Cronbach alpha measure of internal consistency has ranged from 0.82 to 0.95 in 26 studies reviewed by Antonovsky (1993) that have employed this measure. Additionally, in a review of 458 scientific publications and 13 doctoral theses, Cronbach’s alphas in 124 of the studies ranged from 0.70 to 0.95 (Eriksson & Lindstrom, 2005). Eriksson and Lindstrom also noted that intercorrelations
among the subscales have ranged from .52 to .72. Test-retest reliability of the SOC measure included 0.69 to 0.78 (1 year), 0.64 (3 years), 0.42 to 0.45 (4 years), 0.59 to 0.67 (5 years) and 0.54 (10 years) (Eriksson & Lindstrom, 2005). Other empirical studies have shown high test-retest reliability with coefficients ranging from 0.67 to 0.82 (Feldt, Kivimaki, Rantala, & Tolvanen, 2004). Cross-cultural validation and applications of SOC have been noted, as SOC appears to be independent of cultural context. Additionally, this instrument has been used in at least 33 languages in 32 countries (Bowman, 1996; Eriksson & Lindstrom, 2005). In general, the SOC appears to be a reliable, valid, and cross-culturally applicable instrument which measures how individuals maintain a sense of well-being as well as how they manage and perceive adversity.

Antonovsky (1987) strongly argued that sense of coherence should be analyzed as a unidimensional entity and not be divided into its sub-components for interpretation. He stated that the subscales are “inextricably intertwined” but could be differentiated theoretically (1987, p. 86). Subsequent factor analyses offered support for this perspective (Antonovsky, 1993, Callahan & Pincus, 1995; Flannery & Flannery, 1990). However, in a systematic review of 458 scientific publications and 13 doctoral theses, support was found for the multidimensionality of sense of coherence (Eriksson & Lindstrom, 2005).

While Antonovsky recommended that researchers regard sense of coherence as a unidimensional construct, he also shared his supposition that the meaningfulness subscale was the most salient among the three subscales in understanding the impact of SOC on measures of physical and emotional health. Thus, the researcher desired to test Antonovsky’s supposition that the meaningfulness subscale was the most critical
subscale by exploring whether the meaningfulness scale was a significant and unique predictor of both personal growth and distress. The researcher also hypothesized that, in addition to interpreting sense of coherence in its totality, considering each subscale separately (in relation to personal growth and distress) might provide additional understanding of the different components of SOC, particularly with the college student population. Since both perspectives have received support in the literature, this researcher followed Antonovsky’s guideline of using total scores for all analytic procedures with the exception of the last research question: Is the meaningfulness sense of coherence subscale the best predictor of personal growth and distress experienced after a breakup?

**Posttraumatic Growth Inventory**

Personal growth following a relationship breakup was measured using the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI is a 21-item instrument that measures positive outcomes reported by persons who have experienced a range of significant life stressors. Respondents rate each item on a scale from 0 (I did not experience this change as a result of my crisis) to 5 (I experienced this change to a great degree as a result of my crisis) to indicate the degree to which their views changed after a given stressor. Responses are summed to produce a total score, ranging from 0 to 105. However, use of subscale scores (New Possibilities, Relating to Others, Personal Strength, Spiritual Change, and Appreciation of Life) is permitted. Sample items include: *I have more compassion for others* and *I’ve discovered that I’m stronger than I thought I was.* This instrument measures three broad areas reflecting: perceived changes in self, a changed sense of relationship with others, and a changed philosophy of life.
This measure was developed and validated on approximately 600 college students who were asked to reflect on the most negative event they had experienced over the past 5 years. Before administering this instrument, the authors reviewed research investigating perceived benefits after trauma. Based on this literature review, they created 34 items that reflected positive changes commonly reported. These 34 items as well as a demographic questionnaire were administered to 604 college students (199 men, 405 women), primarily ranging in age from 17 to 25. Relationship breakups were among several of the traumatic events reported. Participants reported these traumatic events as occurring less than 6 months ago (22% of cases), between 7 and 12 months ago (16% of cases), between 13 and 23 months ago (17% of cases), between 2 and 4 years ago (32% of cases), and more than 4 years ago (13% of cases). A principal components analysis was performed on the items and five factors emerged including: New Possibilities (5 items), Relating to Others (7 items), Personal Strength (4 items), Spiritual Change (2 items), and Appreciation of Life (3 items) (Tedeschi & Calhoun, 1996). The five PTGI subscales were comprised of the five aforementioned factors. Total scores were used in the current study rather than individual subscale scores, as the researcher wanted to explore general posttraumatic growth/personal growth rather than examining aspects of personal growth separately.

In regard to psychometric properties, the alpha coefficient for this normative sample was 0.90. The five factors also demonstrated internal consistency, ranging from 0.67 to 0.85. Intracorrelations between items on the five subscales ranged from $r=0.62$ to $r=0.83$ and Pearson correlations among the five factors ranged from $r=0.27$ to $r=0.52$. Test-retest reliability over 2 months was $r=0.71$ (Calhoun & Tedeschi, 2006; Tedeschi & Calhoun, 1996). In order to ensure that reports of growth were not a result of
social desirability effects, correlations between the PTGI and the Marlowe-Crowne Social Desirability Scale were examined. Results indicated that the posttraumatic growth individuals reported was not related to social desirability (Tedeschi & Calhoun).

Gender differences were noted in the overall instrument, as women reported more benefits ($M=75.18$, $SD=21.24$) in comparison to men ($M=67.77$, $SD=22.07$). As noted previously, total scores can range from 0 to 105. Women also scored higher than men on every factor except New Possibilities. In the empirical literature, total PTGI scores ranged from $M=48.54$ ($SD=23.00$) for war refugees in Bosnia (Powell et al., 2003) to $M=83.16$ ($SD=19.27$) for college students who experienced a traumatic event in the past year (Tedeschi & Calhoun, 1996).

The PTGI appears to have utility in assessing the growth individuals experience after enduring a significant stressor, specifically in the realms of perceived changes in self, changes in interpersonal relationships, and changes in life philosophies. The PTGI has received support in the literature, as it is regarded as the most widely used indicator of posttraumatic growth (Helgeson, Reynolds, & Tomich, 2006). Additionally, the American Psychological Association (2010) has included this measure on its website and in its national public education campaign “The Road to Resilience.”

**Impact of Event Scale**

The Impact of Event Scale (IES; Horowitz et al., 1979) is a broadly applicable self-report instrument designed to measure subjective distress associated with a specific stressful event. This questionnaire was selected since the researcher wanted to assess the impact and distress associated with a specific event (breakup) versus general functioning and level of distress. This questionnaire consists of 15 items, which assess two main categories of distress: avoidance and intrusion. Respondents are asked to reflect on a
significant life event and report the frequency of symptoms they have experienced in the past 7 days in regards to this event. A 4-point measurement scale with 0 indicating not at all, 1 indicating rarely, 3 indicating sometimes, and 5 indicating often assesses the degree to which individuals experienced such thoughts as I was aware that I still had a lot of feelings about it, but I didn’t deal with them and I had waves of strong feelings about it. Total scores on this measure range from 0 to 75.

The IES can be used to assess current psychological stress reactions after a major life event as well as to detect individuals who necessitate treatment (Sundin & Horowitz, 2002). As noted previously, it assesses two main categories of distress: intrusive experiences (7 items) and avoidance of experiences related to the event (8 items). This scale is grounded in Horowitz’s model of emotional processing post trauma (Horowitz & Wilner, 1976). This model posits that individuals vacillate between the experience of having intrusive thoughts/feelings and avoiding these thoughts/feelings until they are able to make psychological sense of the traumatic experience. Horowitz et al. Wilner (1979) described the scale as follows:

Intrusion was characterized by unbidden thoughts and images, troubled dreams, strong pangs or waves of feelings, and repetitive behavior. Avoidance responses included ideational constriction, denial of the meanings and consequences of the event, blunted sensation, behavioral inhibition or counterphobic activity, and awareness of emotional numbness (p. 211)

In developing the scale, a 20 item questionnaire was initially developed based on pilot studies identifying the intrusion and avoidance categories. This 20-item version was developed to assess stress response syndromes in a sample of 66 individuals receiving outpatient services as a result of experiencing a traumatic life stressor. The sample ranged in age from 20 to 75 and was comprised of mostly females (n=50). The sample was diverse in terms of ethnic backgrounds. About half of this sample reported
experiencing bereavement as their traumatic event, while the rest endorsed having incurred serious injuries from accidents, violence, illness, or surgeries (Horowitz et al., 1979). Cluster analysis was applied to the original 20 items with the primary and secondary clusters, comprising the intrusion and avoidance subscales, respectively. The fifteen most powerful items were then selected, reducing the original 20 items to a 15-item scale. In regards to psychometric properties, test-retest reliabilities were reported as 0.87 for the total stress scores, 0.89 for the intrusion subscale, and 0.79 for the avoidance subscale with an interval of one week between each rating. Split-half reliability of the IES was 0.86. Using Cronbach’s alpha, internal consistency was high with 0.78 for intrusion and 0.82 for avoidance (Horowitz et al., 1979). In a literature review of 23 meta-analytic studies examining the IES’s psychometric properties, internal consistency ranged from 0.65 to 0.90 for the avoidance subscale and from 0.72 to 0.92 for the intrusion subscale (Sundin & Horowitz, 2002). Additionally, test-retest reliability was 0.56 (intrusion) and 0.74 (avoidance), with 1 year elapsing between measurements. In regards to content validity, the mean correlation between avoidance and intrusion was 0.63, suggesting that the subscales represented different types of stress reactions. The original correlation between these two subscales was 0.41 (Horowitz et al., 1979).

The IES has been used in at least 240 studies as a measure of stress reactions after major life events (Sundin & Horowitz, 2003). Rather than focusing on current distress in general, the IES endeavors to illustrate current stress reactions relative to a specific event. Specifically, it has been applied to a variety of psychological stressors including: sexual abuse and assault, various types of losses, violence, illness and injury, and a range of distressing events (Sundin & Horowitz, 2002). The current study attempts to expand the
IES knowledge base by exploring how individuals respond on this measure in regards to nonmarital romantic relationship breakups. Total IES scores were used in the current study, as the researcher was interested in exploring general distress post-breakup as opposed to exploring each component of distress (as measured by the IES) separately.

**Participant Recruitment**

As noted previously, participants invited to partake in this study were undergraduate and graduate students enrolled at a large Midwestern university who had reported experiencing a nonmarital relationship breakup within the past 2 years. After receiving approval for this research through the university’s Human Subjects Institutional Review Board (HSIRB), the investigator contacted the chair of the university’s Department of Counselor Education and Counseling Psychology (CECP), presidents of the university’s Graduate Students of Color and Graduate Student Advisory Committee organizations, and instructors in the university’s Specialty Program in Alcohol and Drug Abuse (SPADA) and Holistic Health programs via email (see Appendix B, Recruitment Email). These individuals were asked to forward the email recruitment invitations to their students and/or members. These email recruitment invitations were attached to the aforementioned email request. The email recruitment invitation, approved by the HSIRB, invited potential participants to contact the researcher via email if interested in participating. The email invitations provided brief information about the study as well as the investigator’s email contact information for individuals desiring to learn more about participation.

When interested individuals contacted the researcher expressing a desire to participate, the researcher answered any questions about the study, confirmed eligibility for participation, and sent a packet to the interested student. Packets contained the
following materials: an informed consent document (see Appendix C, Anonymous Informed Consent Form), Demographic Information Questionnaire (see Appendix A), Impact of Event Scale (Horowitz et al., 1979), Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), a list of counseling referral resources (in case individuals felt particularly distressed after recalling a breakup), a pre-paid postcard addressed to the researcher (to enter the participant in a raffle for a $50 Target gift card), and an envelope addressed to the researcher, in which to return the survey instruments. The materials were arranged in the packets so that participants read the informed consent form first, then completed the Demographic Information Questionnaire. The Orientation to Life Questionnaire, Impact of Event Scale, and Posttraumatic Growth Inventory were counterbalanced in an effort to reduce a potential order effect. The informed consent document provided information about study eligibility, study purpose, time commitment, costs/risks of participation, potential benefits, and instructions for returning completed or blank packets.

All participants were instructed to recall one specific nonmarital romantic relationship breakup that had occurred within the past 2 years when completing the instruments. They were encouraged to complete the forms in a private setting during one sitting. Participants were reminded to refrain from writing their name on any survey materials to ensure anonymity. Additionally, they were instructed to mail the postcard separately so that their names would not be connected to their survey responses. They were informed that their participation would take approximately 25 minutes and that their participation was completely voluntary. Finally, participants were instructed to return completed materials in a self-addressed, stamped envelope provided by the researcher.
In addition to email recruitment, participants were also recruited through in-person means (see Appendix D, In-person Recruitment Script). After seeking permission from SPADA and Holistic Health instructors, the researcher attended a class session to inform students about the research study. The researcher read the recruitment script, explaining the study and providing an opportunity for students to ask questions. Packets were distributed to all students and they were instructed to return the packets (whether they were completed or blank) in the self-addressed envelope provided by the researcher. Requesting that students return materials in this manner helped ensure that they would not be identified as having participated or not.

Finally, participants were recruited through flyers placed in designated advertisement areas on campus. The procedures for responding to emails from interested individuals learning about the study via recruitment flyers followed the same format as the email recruitment procedures previously described. Specifically, individuals who contacted the researcher (via email) expressing interest in participating were sent an email with recruitment script providing brief details about the study as well as an opportunity to ask questions. The researcher confirmed eligibility before a packet was sent to the interested individual.

**Data Screening**

As noted, the final sample was comprised of 150 participants. After an initial review of the 151 packets returned it was determined that one individual did not meet criteria, as this person experienced a breakup outside of the timeline criteria of 2 years. Subsequently, data from this person were eliminated from analyses. After determining that all remaining participants met study criteria, each packet was assigned a case
identification number, spanning from 1 to 150. Both SPSS 11.5 for Windows and SPSS Predictive Analytic Software (PASW) 17.0 for Windows were used to compute analyses.

The researcher reviewed the responses on returned instruments for accuracy and completion. After ensuring that returned instruments contained complete information, the researcher entered all data into SPSS. Another individual was enlisted to assist with checking potential data entry errors. No data entry errors were detected after all participant responses were rechecked. Before proceeding with analysis, 13 items on the Orientation to Life questionnaire had to be reverse scored. Data were also screened using SPSS for distribution problems (i.e., violating assumptions of normality), missing values, univariate and multivariate outliers, and statistical assumption violations. During this review, it was determined that 8 participants had omitted a total of 11 variables on 8 separate survey questions. The researcher addressed missing variable concerns by substituting the median in place of the missing values.

After missing values were replaced, univariate and multivariate outliers were identified by exploring descriptive statistics, extreme values, and tests of normality for all instrument variables. Univariate outliers were identified by inspecting histograms, box plots, and normal probability plots as recommended by Tabachnick and Fedell (2001). While several univariate outliers were detected, it was determined that none of them were considered unusual to warrant deletion, as their skewness and kurtosis fell within an acceptable range. It should be noted that there were 4 outliers for age, resulting in a skewness of 2.943 and kurtosis of 11.616. However, due to its positive skewness, age was transformed using a base-10 logarithm. After this transformation, skewness was reduced to 1.971 and kurtosis was reduced to 4.941. A base-10 logarithm was used to ensure normal distribution of data (Meyers, Gamst, & Guarino, 2006).
Multivariate outliers were screened after the age variable was transformed to “log_age” by calculating the Mahalanobis distance for all continuous variables (Meyers et al., 2006). The Mahalanobis distance stem-leaf plot instructed that all cases with values of 31.264 or greater would be considered an outlier. One multivariate outlier (Participant 49) was detected at p<.001. The scores of Participant 49 were compared to the scores of other respondents. The only variable that was remarkably different in comparison to other participants was age. Although Participant 49 is clearly the oldest respondent in the sample (age 50), this individual’s age alone would not preclude inclusion in the current study. Therefore, all variables were used in the analysis.

Data Analysis

In order to address the primary research hypotheses, the following analyses were employed. First, Pearson r correlations were used to explore the first research question: What are the relationships among sense of coherence, personal growth, and distress reported after a relationship breakup? Thus, Null Hypothesis 1 was tested utilizing Pearson r correlations. Total scores on each of the 3 instruments (OLQ, PTGI, IES) were used to calculate Pearson r correlations.

Canonical correlation analysis was employed to consider the second research question: What is the nature of the relationships between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress)? Thus, Null Hypothesis 2 was tested using canonical correlation analysis.

Canonical correlation analysis is used to assess the relationship between two sets of measured variables, having two or more independent (predictor) and two or more
dependent (criterion) variables in each set (Meyers et al., 2006). Thus, canonical correlation analysis can accommodate multiple predictor variables and multiple criterion variables. As such, canonical correlation analysis evaluates simultaneously the relationship among several predictor and several criterion variables. Since the relationship among variables is evaluated simultaneously, rather than running numerous separate multiple regressions, Type 1 error is minimized. As noted in Sherry and Henson (2005) canonical correlation requires a rationale for why the variables are treated together in a set. For the present study, the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) were grouped together in a set as these variables have received attention in the literature as potentially impacting personal growth and distress after a breakup and/or interpersonal loss. The researcher endeavored to see which Personal/Relationship Characteristics best explained the Adjustment Factors variable set (personal growth, distress). The Adjustment Factors variable set of personal growth and distress (as measured by the PTGI and IES, respectively) were treated together since the extant literature supports the idea of persons experiencing both personal growth and distress after highly stressful life situations (Tedeschi & Calhoun, 1995, 1996). Canonical correlation analysis was employed, as this statistical procedure is used when variables in a set are believed to have a relationship with one another (Sherry & Henson, 2005). It should be noted that canonical correlation analysis is an exploratory analysis as opposed to a confirmatory statistical procedure. Since the researcher was interested in exploring the relationship among multiple predictor and criterion variables, use of this analysis was deemed appropriate.
Sherry and Henson (2005) noted that canonical correlation examines the correlation between a synthetic criterion and synthetic predictor variable. These synthetic variables are weighted based on the relationships among the variables within the sets. Thus, canonical correlation analysis can be conceptualized as a bivariate correlation (Pearson $r$) between the synthetic criterion (i.e., Adjustment Factors) and synthetic predictor variable (i.e., Personal/Relationship Characteristics). Figure 1 is an adaptation of the model the authors illustrated, offering an explanation of how canonical correlation analysis can be conceptualized in the current study.

Figure 1. Display of First Function in Canonical Correlation

Figure 1. Illustration of the first function in the canonical correlation analysis with five predictor variables comprising the Personal/Relationship Characteristics variate and two criterion variables comprising the Adjustment Factors variate. The canonical correlation is the Pearson $r$ between the two synthetic variates (i.e., Personal/Relationship Characteristics & Adjustment Factors). All observed variables in a set are linearly combined into a synthetic/latent variable to explore the relationship between all Personal/Relationship Characteristics and Adjustment Factors.
The following criteria were used to determine the significance of the results after employing canonical correlation. In order to consider the full canonical model, Wilks’ lambda was used to test the null hypothesis that all squared canonical correlation coefficients are equal to zero ($\lambda = 0$). Next, canonical functions were examined to determine if they contributed significantly to the variance. As noted in Meyers et. al (2006), “These functions represent the weighted combination of the values on the various predictor variables that will correlate more highly with the criterion variate than any single predictor variable alone” (p. 193). The first function of canonical variates maximizes the correlation between the sets of variables; the second function of canonical variates, which are orthogonal to the first, maximizes the correlation between the sets of variables after the variance from the first function of canonical variates is removed. Both Pedhazur (1997) and Sherry and Henson (2005) have suggested that only canonical functions sharing at least 10% of the variance be considered meaningful. As stated in Sherry and Henson (2005), “The CCA researcher should only interpret those functions that explain a reasonable amount of variance between the variable sets or risk interpreting an effect that may not be noteworthy or replicable in future studies” (p. 42). This guideline was followed in interpreting the canonical analysis output for this study. Next the structure coefficients ($r_s$) were used to interpret the canonical functions. Following Pedhazur’s (1997) guidelines for interpretation, structure coefficients $> .30$ were considered meaningful for interpretation.

Two separate hierarchical multiple regression analyses were performed in order to address the third research question: Is the meaningfulness sense of coherence subscale the best predictor of personal growth and distress experienced after a breakup? Hierarchical multiple regression is generally used to examine specific theoretically-based
hypotheses (Licht & Grimm, 1995). Specifically, hierarchical regression involves a series of simultaneous analyses which use the same criterion. Therefore, hierarchical multiple regression was selected to test Null Hypotheses 3a and 3b. This method permitted the researcher to explore whether the meaningfulness scale accounted for significant additional variance in predicting personal growth and distress after controlling for comprehensibility and manageability in the analysis. For both sets of hierarchical regression analyses the meaningfulness variable was entered last (after comprehensibility and manageability) in order to explore whether meaningfulness accounted for significant unique variance in predicting post-breakup personal growth and distress.

Meaningfulness was entered last in the analysis for several reasons. The primary reason this researcher explored whether the meaningfulness subscale contributed significant unique variance in predicting personal growth and distress post-breakup involved Antonovsky’s (1987) supposition that the meaningfulness subscale was the most salient of the three subscales. Additionally, research has indicated that the meaningfulness subscale has accounted for more variance (25%) as compared to the other subscales of comprehensibility (14%) and manageability (14%) (Flannery Jr, Perry, Penk, & Flannery, 1994). Since literature has supported the notion that the ability to construe meaning after a loss serves a positive and adaptive function in impacting individuals’ lives (Davis & Nolen-Hoeksema, 2001; Frankl, 1963, 1969, 1997; Janoff-Bulman, 1992; Janoff-Bulman & Frantz, 1997; Lazarus & Folkman, 1984; Neimeyer, 2001; Park, 2010), it seemed important to explore whether the meaningfulness subscale would add significant unique variance in predicting personal growth and distress after a loss such as a breakup.
In addition to the main data analysis procedures, several other analyses were employed in an effort to describe the sample as well as provide data relevant to certain suppositions in the extant literature. Participant demographic information was explored using the descriptive statistics function on SPSS, which provided frequency information for categorical variables and descriptive statistics (e.g. mean, standard deviation) for continuous variables. Additionally, a chi square test was employed to explore select categorical demographic variables the researcher deemed of interest. The variables included in the nonparametric chi square test were those receiving support in the literature as necessitating exploration (e.g. sex of participant and initiator status). Finally, several one-way analysis of variance tests were employed to explore relationships among sex of participant and relevant continuous variables, as sex of participant has received attention in the sense of coherence, personal growth, distress, and relationship breakup literature.

**Summary of Chapter III**

The purpose of Chapter III was to outline the methods used in this study. This chapter provided a description of the following: the participants, recruitment procedures employed, the instruments utilized as well as the psychometric properties associated with each measure, and the data analysis procedures selected and utilized (including the rationale for using each specific statistical procedure). Chapter IV will report the research findings derived from the data analysis procedures.
CHAPTER IV

RESULTS

Introduction

The purpose of Chapter IV is to present the primary research findings of this study. Demographic characteristics are presented first, followed by descriptive statistics of primary variables measured. Next, relationships among primary variables and select demographic/relationship variables (as measured by the Demographic Information Questionnaire) are outlined. Additionally, relationships among select demographic/relationship variables and other variables of interest are presented. Finally, main findings are presented within the context of the investigator’s three main research questions. It should be noted that primary variables consist of sense of coherence, personal growth, and distress. Select demographic/relationship variables reflect breakup timeline, relationship length, initiator status, and sex of participant.

Demographic Characteristics

Participant variables are presented in Table 1 followed by relationship variables presented in Table 2 and Table 3. Age ranged from 18 to 50, with a mean age of 21.57 years (SD=4.78). The age range of 18-22 accounted for 74% (n=111) of the sample. In regards to sex, 67.33% (n=101) were females and 32.67% (n=49) were males. A majority of the participants, 82% (n=123), reported their race as White, not of Hispanic origin, followed by African-American/Black, 7.33% (n=11), and Hispanic, 4% (n=6). The remaining 6.67% (n=10) participants identified as either American Indian/Alaskan Native, Asian/Pacific Islander, Bi-racial/Multiracial, or Other.

Sexual orientation was predominantly heterosexual, as 96.67% (n=145) identified with this category. Most students, 79.33% (n=119) had undergraduate student status and,
of these undergraduates, 40.34% (n=48) were in their first year of college. Graduate students comprised 20.7% (n=31) of the sample. Of these graduate students, the majority of them, 77.4% (n=24) reported being in either their first or second year of their graduate program.

Table 1
*Frequencies and Percentages for Participant Variables*

<table>
<thead>
<tr>
<th>Participant Variables</th>
<th>Category</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18-22 Years</td>
<td>111</td>
<td>74.0</td>
</tr>
<tr>
<td></td>
<td>23-27 Years</td>
<td>27</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>28-32 Years</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>33-37 Years</td>
<td>4</td>
<td>2.67</td>
</tr>
<tr>
<td></td>
<td>38-50 Years</td>
<td>2</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>49</td>
<td>32.67</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>101</td>
<td>67.33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
<tr>
<td>Race</td>
<td>American Indian or Alaskan Native</td>
<td>2</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>African-American/Black, not of Hispanic origin</td>
<td>11</td>
<td>7.33</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>White, not of Hispanic origin</td>
<td>123</td>
<td>82.0</td>
</tr>
<tr>
<td></td>
<td>Bi-racial, Multiracial</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
<tr>
<td>Sexual Orientation</td>
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<tr>
<td></td>
<td>Gay Male</td>
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<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Heterosexual</td>
<td>145</td>
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</tr>
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<td></td>
<td>Lesbian</td>
<td>4</td>
<td>2.67</td>
</tr>
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<td>Total</td>
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<td>100.0</td>
</tr>
<tr>
<td>Student Status</td>
<td>Undergraduate</td>
<td>119</td>
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<td>Graduate</td>
<td>31</td>
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<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 2 reflects frequency and percentages for categorical relationship variables. In regards to categorical relationship variables, 96% (n=144) of the participants endorsed having been in a heterosexual union that had dissolved. Initiator status, reflecting whether the participant or the partner initiated the breakup, was fairly comparable, as 52.67% (n=79) identified themselves as the breakup initiator, whereas 47.33% (n=71) reported having been the recipient. In regards to post-breakup dating, 41.33% (n=62), of participants reported that they had not yet begun dating post-breakup. Most participants, 86% (n=129), denied that they received formal counseling to address their concerns post-breakup, although 14% (n=21) noted that they did participate in formal counseling to address their reactions to a specific breakup.

Table 2
 Frequencies and Percentages for Categorical Relationship Variables

<table>
<thead>
<tr>
<th>Relationship Variables</th>
<th>Category</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship Type</td>
<td>Heterosexual</td>
<td>144</td>
<td>96.0</td>
</tr>
<tr>
<td></td>
<td>Same-Sex</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
<tr>
<td>Initiator Status</td>
<td>You</td>
<td>79</td>
<td>52.67</td>
</tr>
<tr>
<td></td>
<td>Partner</td>
<td>71</td>
<td>47.33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
<tr>
<td>Dating Status</td>
<td>Had not begun dating</td>
<td>62</td>
<td>41.33</td>
</tr>
<tr>
<td></td>
<td>Had begun dating</td>
<td>88</td>
<td>58.67</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
<tr>
<td>Counseling</td>
<td>Yes</td>
<td>21</td>
<td>14.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>129</td>
<td>86.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note.* Relationship Type refers to the kind of relationship participants were involved in prior to the breakup, Initiator Status refers to which partner was primarily responsible for initiating the breakup, Dating Status refers to whether or not a participant began dating after the breakup, and Counseling refers to whether or not a participant engaged in formal counseling post-breakup to address breakup-related adjustment concerns.
As presented in Table 3, descriptive statistics for continuous relationship variables were explored using means and standard deviations of selected variables. The mean impact was 5.61 (SD=1.29) on a 7-point Likert Scale, which indicated that participants regarded their breakup as moderately to significantly impactful. Additionally, frequency data on breakup impact indicated that 84.67% (n=127) of participants reported experiencing a breakup that they deemed as having at least a moderate impact on their lives. In regards to relationship length, the mean relationship length prior to breakup was 21.41 months (SD=15.12). Breakup timeline (time since the breakup) was, on average, 8.88 months (SD=6.76). Results indicated that participants who had reported beginning dating again (n=88) had waited an average of 3.01 months (SD=3.03) before beginning to date a new partner. The amount of time before dating a new partner ranged from 0 months (e.g. immediately beginning to date someone new) to 15 months post breakup. In regards to partners dated since breakup, the range was from 1 partner to 13 partners, with an average of 1.09 partner post-breakup (SD=1.62). The majority of individuals, 81.82% (n=72), out of the 88 people who reported they had begun dating, indicated that they had dated no more than 2 partners post-breakup. Three participants in the sample (n=150) reported that they had returned to dating their former partner post-breakup. It should be noted that, when exploring time elapsed before dating a new partner and the number of new partners, only persons who had endorsed dating a new person (and not returning to the same partner) were included.
Table 3  
*Descriptive Statistics for Continuous Relationship Variables*

<table>
<thead>
<tr>
<th>Relationship Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact</td>
<td>5.61</td>
<td>1.29</td>
</tr>
<tr>
<td>Relationship Length</td>
<td>21.41</td>
<td>15.12</td>
</tr>
<tr>
<td>Breakup Timeline</td>
<td>8.88</td>
<td>6.76</td>
</tr>
<tr>
<td>Time Before Dating (n=88)</td>
<td>3.01</td>
<td>3.02</td>
</tr>
<tr>
<td>Partners Since Breakup (n=88)</td>
<td>1.09</td>
<td>1.62</td>
</tr>
</tbody>
</table>

*Note.* Impact refers to the degree to which the breakup impacted the participant’s life, Relationship Length refers to the number of months the relationship endured, Breakup Timeline refers to the number of months since breakup, Time Before Dating refers to the number of months elapsed before dating a new partner, and Partners Since Breakup refers to the number of partners a participant had dated post-breakup.

**Descriptive Statistics**

The descriptive statistics for primary variables (sense of coherence, personal growth, distress) are presented in Table 4. As noted previously, participants completed the following measures: Orientation to Life Questionnaire (OLQ; Antonovsky, 1987); the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), and the Impact of Event Scale (IES; Horowitz et al., 1979). These measures assessed sense of coherence, personal growth, and distress, respectively. Scores for Sense of Coherence (OLQ) ranged from 29 to 203. Scores for personal growth (PTGI) ranged from 0 to 126. Scores for distress (IES) ranged from 0 to 75. In order to test internal consistency reliability of each instrument, all scale items were entered into SPSS and reliability analyses were performed for each instrument. These inter-correlations among test items yielded a Cronbach’s alpha for each instrument as well as for each subscale. Cronbach’s alpha will generally increase as the intercorrelations among test items increase.
Intercorrelations are maximized when all items measure the same construct; thus, higher Cronbach's alpha coefficients are indicative of higher reliability (Cronbach, 1951).

Alpha for total sense of coherence was .89 (M=131.19, SD=20.62), alpha for total posttraumatic growth scores was .89 (M=73.25, SD=19.61) and alpha for total impact of event scores was .89 (M=33.48, SD=16.94). Thus, for the main measures used in the present study, the overall total scores had adequate internal consistency.

Table 4
Descriptive Statistics for Primary Variables

<table>
<thead>
<tr>
<th>Primary Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLQ-Comprehensibility</td>
<td>42.45</td>
<td>8.85</td>
<td>78.36</td>
<td>0.78</td>
</tr>
<tr>
<td>OLQ-Manageability</td>
<td>47.43</td>
<td>7.75</td>
<td>60.07</td>
<td>0.71</td>
</tr>
<tr>
<td>OLQ-Meaningfulness</td>
<td>41.30</td>
<td>6.85</td>
<td>46.89</td>
<td>0.78</td>
</tr>
<tr>
<td>OLQ-Total-OLQ</td>
<td>131.19</td>
<td>20.62</td>
<td>425.36</td>
<td>0.89</td>
</tr>
<tr>
<td>PTGI-Relating to Others</td>
<td>23.71</td>
<td>6.59</td>
<td>43.43</td>
<td>0.64</td>
</tr>
<tr>
<td>PTGI-New Possibilities</td>
<td>18.20</td>
<td>5.85</td>
<td>34.19</td>
<td>0.72</td>
</tr>
<tr>
<td>PTGI-Personal Strength</td>
<td>14.06</td>
<td>4.53</td>
<td>20.51</td>
<td>0.65</td>
</tr>
<tr>
<td>PTGI-Spiritual Change</td>
<td>5.36</td>
<td>2.74</td>
<td>7.53</td>
<td>0.58</td>
</tr>
<tr>
<td>PTGI-Appreciation of Life</td>
<td>11.91</td>
<td>3.54</td>
<td>12.51</td>
<td>0.52</td>
</tr>
<tr>
<td>PTGI-Total-PTGI</td>
<td>73.25</td>
<td>19.61</td>
<td>384.68</td>
<td>0.89</td>
</tr>
<tr>
<td>IES-Intrusion</td>
<td>15.67</td>
<td>9.72</td>
<td>94.41</td>
<td>0.90</td>
</tr>
<tr>
<td>IES-Avoidance</td>
<td>17.81</td>
<td>9.25</td>
<td>85.62</td>
<td>0.78</td>
</tr>
<tr>
<td>IES-Total-IES</td>
<td>33.48</td>
<td>16.94</td>
<td>287.12</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Note. OLQ = Orientation to Life Questionnaire (Antonovsky, 1987).

Relationships among Primary Variables and Select Demographic/Relationship Variables

As noted previously, primary variables consisted of sense of coherence, as measured by the OLQ (Antonovsky, 1987), personal growth, as measured by the PTGI (Tedeschi & Calhoun, 1996), and distress, as measured by the IES (Horowitz et al., 1979). Select demographic/relationship variables included the following: breakup timeline (time elapsed since breakup), relationship length, initiator status (who initiated
breakup), and sex of participant. These variables were specifically selected, as they have been debated and explored within the relationship breakup literature. As shown in Table 5, breakup timeline was significantly and positively correlated with sense of coherence ($r = .238, p<.01$) and significantly and inversely correlated with distress ($r = -.250, p<.01$). This suggests that those who had experienced a breakup more recently reported lower sense of coherence while those who had experienced a breakup longer ago reported higher sense of coherence. Additionally, those who had experienced a breakup longer ago reported less current breakup-related distress. There was no statistically significant correlation between breakup timeline and personal growth nor were there statistically significantly correlations between relationship length and each primary variable (sense of coherence, personal growth, distress) (see Table 5).

In order to determine if there was a significant relationship between initiator

<table>
<thead>
<tr>
<th></th>
<th>Log of Age</th>
<th>Impact</th>
<th>Breakup Timeline</th>
<th>Relationship Length</th>
<th>Partners Since Breakup</th>
<th>Sense of Coherence</th>
<th>Personal Growth</th>
<th>Distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log of Age</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Impact</td>
<td>.175*</td>
<td>1</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Breakup Timeline</td>
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<td>.130</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Length</td>
<td>.228**</td>
<td>.373**</td>
<td>.029</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partners Since Breakup</td>
<td>-.102</td>
<td>-.023</td>
<td>-.011</td>
<td>-.072</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of Coherence</td>
<td>.013</td>
<td>-.139</td>
<td>.238**</td>
<td>.014</td>
<td>.065</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Growth</td>
<td>.192*</td>
<td>.128</td>
<td>.087</td>
<td>.050</td>
<td>.117</td>
<td>.180*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Distress</td>
<td>.030</td>
<td>.057</td>
<td>-.250**</td>
<td>-.047</td>
<td>.048</td>
<td>.323**</td>
<td>.064</td>
<td>1</td>
</tr>
</tbody>
</table>
status (initiator of breakup versus recipient) and each primary variable, the following one-way analysis of variance procedures were performed: initiator status by sense of coherence, initiator status by personal growth, and initiator status by distress. Results were not statistically significant. Results indicated that initiators’ mean sense of coherence, personal growth, and distress scores did not statistically differ from recipients’ mean sense of coherence, personal growth, and distress scores. Thus, initiators of the breakup and recipients of the breakup tended to report similar levels of sense of coherence, $F(1, 148) = 2.87, p = .092$, personal growth, $F(1, 148) = .060, p = .807$, and distress, $F(1, 148) = 1.89, p = .172$ post-breakup. Analysis of variance for sex of participant by sense of coherence, sex of participant by personal growth, and sex of participant by distress all yielded nonsignificant results as well. Males’ mean sense of coherence, personal growth, and distress scores did not statistically differ from females’ mean sense of coherence, personal growth, and distress scores, $F(1, 148) = 1.16, p = .283; F(1, 148) = .229, p = .663; F(1, 148) = 2.25, p = .135$, respectively. Thus, males and females tended to endorse similar sense of coherence, personal growth, and distress levels post-breakup.

**Relationships among Select Demographic/Relationship Variables and Other Variables**

In addition to exploring select demographic/relationship variables (breakup timeline, relationship length, initiator status, sex of participant) with primary variables (sense of coherence, personal growth, distress), the researcher also endeavored to explore relationships among select demographic/relationship variables and other variables of interest. As illustrated in Table 5, correlations between breakup timeline and impact were not significant. However, relationship length correlated positively and significantly
with impact, as those who were involved in longer relationships endorsed a more significant impact post-breakup ($r = .373$, $p < .01$).

The relationship between sex and initiator status was explored, as relationship breakup literature has investigated these two variables in numerous studies (Helgeson, 1994a; Knox et al., 2000; Robak and Weitzman, 1998; Sprecher, 1994, Sprecher et al., 1998). Results of a chi-square test of independence analysis were not statistically significant, $x^2(1, N=150) = 0.96$, $p = .33$. Thus, there does not appear to be a significant relationship between sex and initiator status. Males and females were similar in terms of reporting themselves as initiators of breakups or recipients of breakups. Additionally, sex of participant was explored in relation to impact. As noted previously, impact reflected participants’ ratings on a 7-point Likert scale regarding how impactful they perceived their breakup. A rating of 1 indicated very little impact whereas a rating of 7 indicated significant impact. A one-way analysis of variance (sex of participant x impact) was employed to test for impact differences across sex. Results revealed statistically significant differences between males and females, $F(1, 148) = 13.04$, $p < .001$. Males’ mean impact scores differed statistically from females’ mean impact scores. Specifically, females regarded their breakups as more impactful ($M = 5.86$) than males ($M = 5.08$).

**Main Findings**

Main findings attempt to answer the following research questions:

1. What are the relationships among sense of coherence, personal growth, and distress reported after a relationship breakup?

2. What is the nature of the relationships between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline,
relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress)?

3. Is the meaningfulness sense of coherence subscale the best predictor of personal growth and distress experienced after a breakup?

Tests of Hypotheses

As noted previously, sense of coherence was measured by total scores on the Orientation to Life Questionnaire (OLQ; Antonovsky, 1987) comprised of the comprehensibility, manageability, and meaningfulness subscales. Personal growth was measured using total scores on the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), comprised of the relating to others, new possibilities, personal strength, spiritual change, and appreciation of life subscales. Finally, distress was measured using total scores on the Impact of Event Scale (IES; Horowitz et al., 1979), comprised of the intrusion and avoidance subscales. Table 6 presents the Pearson $r$ correlations among the primary variables. As illustrated in Table 6, several significant correlations were noted.

**Null hypothesis 1a.** Participants will not demonstrate a significant correlational relationship between sense of coherence and personal growth, as measured by the total score on the Orientation to Life Questionnaire (Antonovsky, 1987) and the total score on the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), respectively.

**Alternative hypothesis 1a.** Participants will demonstrate a significant correlational relationship between sense of coherence and personal growth.

The results of the Pearson $r$ correlation analysis indicated that there was a significant positive correlational relationship between sense of coherence and personal growth at the $p<.05$ level ($r=.180$). Higher scores on sense of coherence were associated with greater personal growth post-breakup. Therefore, null hypothesis 1a was rejected.
Null hypothesis 1b. Participants will not demonstrate a significant correlational relationship between sense of coherence and distress, as measured by the total score on the Orientation to Life Questionnaire (Antonovsky, 1987) and the total score on the Impact of Life Event Scale (Horowitz et al., 1979), respectively.

Alternative hypothesis 1b. Participants will demonstrate a significant correlational relationship between sense of coherence and distress.

The results of the Pearson $r$ correlation analysis indicated that there was a significant negative correlational relationship between sense of coherence and distress at the $p<.01$ level ($r = -.323$). Higher scores on sense of coherence were associated with less distress post-breakup. Therefore, null hypothesis 1b was rejected.

Null Hypothesis 1c. Participants will not demonstrate a significant correlational relationship between personal growth and distress, as measured by the total score on the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), and the total score on the Impact of Life Event Scale (Horowitz et al., 1979), respectively.

Alternative Hypothesis 1c. Participants will demonstrate a significant correlational relationship between personal growth and distress.

The results of the Pearson $r$ correlation analysis indicated that there was not a significant correlational relationship between personal growth and distress. Therefore, findings failed to reject null hypothesis 1c.
Table 6
Correlation Matrix for Primary Variables

|                  | OLQ Comprehensibility | OLQ Manageability | OLQ Meaningfulness | Sense of Coherence (OLQ) | PTGI Relating to Others | PTGI New Possibilities | PTGI Personal Strength | PTGI Spiritual Change | PTGI Appreciation of Life | Posttraumatic Growth Inventory (PTGI) | IES Intrusion subscale | IES Avoidance subscale | Impact of Event (IES) |
|------------------|------------------------|-------------------|-------------------|--------------------------|-------------------------|------------------------|------------------------|------------------------|-------------------------------|------------------------|------------------------|------------------------|
| OLQ Comprehensibility | 1                      |                   |                   |                          |                         |                        |                        |                        |                               |                        |                        |                        |
| OLQ Manageability  | .718**                 | 1                 |                   |                          |                         |                        |                        |                        |                               |                        |                        |                        |
| OLQ Meaningfulness| .598**                 | .651**            | 1                 |                          |                         |                        |                        |                        |                               |                        |                        |                        |
| Sense of Coherence (OLQ) | .897**           | .900**            | .833**            | 1                        |                         |                        |                        |                        |                               |                        |                        |                        |
| PTGI Relating to Others | .129               | .075              | .160              | .137                     | 1                       |                        |                        |                        |                               |                        |                        |                        |
| PTGI New Possibilities | .227**            | .170*             | .235**            | .239**                   | .752**                  | 1                      |                        |                        |                               |                        |                        |                        |
| PTGI Personal Strength | .176*            | .177*             | .178*             | .202*                    | .707**                  | .703**                 | 1                      |                        |                               |                        |                        |                        |
| PTGI Spiritual Change | .112               | .110              | .171*             | .146                     | .721**                  | .600**                 | .509**                 | 1                      |                               |                        |                        |                        |
| PTGI Appreciation of Life | -.041              | -.058             | .045              | -.025                    | .526**                  | .569**                 | .480**                 | .403**                 | 1                             |                        |                        |                        |
| Posttraumatic Growth Inventory (PTGI) | .160              | .122              | .197*             | .180*                    | .919**                  | .900**                 | .835**                 | .751**                 | .694**                        | 1                      |                        |                        |
| IES Intrusion subscale | -.279**           | -.317**           | -.178*            | -.298**                  | .107                    | -.015                  | .023                   | .077                   | .111                          | .057                   | 1                      |                        |
| IES Avoidance subscale | -.190*            | -.333**           | -.218**           | -.279**                  | .059                    | -.003                  | .063                   | .000                   | .130                          | .057                   | .596**                 | 1                      |
| Impact of Event (IES) | -.254**           | -.364**           | -.221**           | -.323**                  | .094                    | -.010                  | .021                   | .044                   | .135                          | .064                   | .899**                 | .888**                 | 1                      |

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)
Null Hypothesis 2. The canonical correlation analysis between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress) will indicate that all squared canonical correlation coefficients, $R_c^2$, are equal to zero.

Alternative Hypothesis 2. The canonical correlation analysis between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress) will indicate that all squared canonical correlation coefficients, $R_c^2$, are not equal to zero.

As noted previously, the nature of the relationships among the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress) were analyzed using canonical correlation analysis. In order to test the significance of the first squared canonical correlation, $R_c^2$, Wilks’ lambda was employed. Wilks’ lambda essentially represents an inverse effect size on the amount of variance not accounted for between the predictor and criterion variable sets (Sherry & Henson, 2005). Results indicated that the first squared canonical correlation coefficient was statistically significant (Wilks’ Lambda = .807, $F(10, 286.00) = 3.23$, $p = .001$). Thus, null hypothesis 2 was rejected. The effect size for the full model (computed as $1 - \text{Lambda}$) was .193. Thus, the full model was statistically significant but had a small effect size. Table 7 presents the results of the Wilks’ Lambda test of significance for the full canonical model.
The analysis produced two canonical functions. The first canonical function yielded the highest canonical correlation, $R_c = .435$ and shared 18.95% of the variance between the two variable sets. The second canonical function yielded a canonical correlation of $R_c = .061$ and accounted for .38% of the shared variance between the two variable sets. This second canonical function was not statistically significant. Only the first canonical function was retained for interpretation. Table 8 presents the standardized canonical coefficients, structure canonical coefficients, and squared structure coefficients for Function 1 of the canonical model. As noted previously, since the second function was not significant only results from the first canonical function were interpreted. Standardized canonical coefficients refer to the standardized coefficients used in the linear equation (describing the relationship between the two synthetic variables on a particular canonical function). These canonical coefficients combine observed predictor variables into a synthetic predictor variate and observed criterion variables into a synthetic criterion variate (Sherry & Henson, 2005). Thus, standardized canonical function coefficients reflect how much variance a particular variable accounts for in regards to the variates (both predictor and criterion). The larger the standardized canonical coefficient, the greater the contribution of the respective variable to the synthetic variate. The standardized canonical coefficients for the Personal/Relationship Characteristics variable set were sense of coherence ($- .740$), breakup timeline ($- .417$), relationship length ($- .107$), initiator status ($.140$), and sex of participant ($- .149$). Results
for the first canonical function indicated that standardized canonical coefficients for the Adjustment Factors variable set were personal growth (-.479) and distress (.909).

Structure coefficients ($rs$) reflect the bivariate correlation between a particular observed variable and its corresponding synthetic variate (Sherry & Henson, 2005). For instance, the correlation between an observed variable (i.e., sense of coherence) and the canonical function Personal/Relationship Characteristics variate (i.e., synthetic variate created from all observed Personal/Relationship Characteristics variables) would reflect a structure coefficient for sense of coherence. Structure coefficients assist in interpretation as they help determine which variables are most useful in creating the synthetic predictor (i.e., Personal/Relationship Characteristics) or criterion (i.e., Adjustment Factors) variate. Higher structure coefficients are indicative of a stronger correlation between the observed predictor variable and its respective synthetic variate. The structure coefficients for the Personal/Relationship Characteristics variables were sense of coherence (-.873), breakup timeline (-.617), relationship length (-.152), initiator status (.256), and sex of participant (-.299). The structure coefficients for the Adjustment Factors variable set were personal growth (-.421) and distress (.878). Following Pedhazur’s (1997) guidelines for interpretation, structure coefficients >.30 were considered meaningful for interpretation. Therefore, personal growth, distress, sense of coherence, and breakup timeline were retained for interpretation.

Results indicated that sense of coherence offered the greatest contribution (76.21%) towards explaining the variance in the predictor variate and distress offered the greatest contribution (77.09%) towards explaining the variance of the criterion variate. After the structure coefficients were examined, results revealed that those participants with a higher level of distress (.878) and lower personal growth (-.421) were associated
with having had a shorter time since the breakup (-.617) and a lower sense of coherence (-.873). In other words, participants endorsing a greater sense of coherence and a longer timeline since the breakup occurred, tended to report having more personal growth and less distress.

Table 8
Canonical Correlation Analysis for Function 1

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Coef</th>
<th>$r_s$</th>
<th>$r^2$ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Coherence</td>
<td>-.740</td>
<td>-.873</td>
<td>76.21</td>
</tr>
<tr>
<td>Breakup Timeline</td>
<td>-.417</td>
<td>-.617</td>
<td>38.07</td>
</tr>
<tr>
<td>Relationship Length</td>
<td>-.107</td>
<td>-.152</td>
<td>2.31</td>
</tr>
<tr>
<td>Initiator Status</td>
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<td>.256</td>
<td>6.55</td>
</tr>
<tr>
<td>Sex</td>
<td>-.149</td>
<td>-.299</td>
<td>8.94</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion Variables</th>
<th>Coef</th>
<th>$r_s$</th>
<th>$r^2$ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Growth</td>
<td>-.479</td>
<td>-.421</td>
<td>17.72</td>
</tr>
<tr>
<td>Distress</td>
<td>.909</td>
<td>.878</td>
<td>77.09</td>
</tr>
</tbody>
</table>

Note. Sense of Coherence refers to total scores on the Orientation to Life Questionnaire, (OLQ; Antonovsky, 1987), Breakup Timeline refers to the number of months since breakup, Relationship Length refers to the number of months the relationship endured, Initiator Status refers to which partner was primarily responsible for initiating the breakup, Sex refers to the biological sex of the participant, Personal Growth refers to total scores on the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), and Distress refers to total scores on the Impact of Event Scale (IES; Horowitz et al., 1979).

Null Hypothesis 3a. After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will not contribute significant unique variance in explaining personal growth.

Alternative Hypothesis 3a. After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will contribute significant unique variance in explaining personal growth.
To answer the third research question, and to test null hypothesis 3a, hierarchical regression was performed. The results of the hierarchical regression on personal growth are presented in Table 9. It should be noted that, for both regression analyses (personal growth and distress), collinearity statistics were within the acceptable range, with the tolerance value exceeding .01 for all subscales. This determination was consistent with guidelines recommended in Meyers et al. (2006). The sense of coherence subscales (comprehensibility, manageability, meaningfulness) were entered into the hierarchical regression equation in the following order: comprehensibility and manageability were entered into Block/Model 1 and, after controlling for these two variables, meaningfulness was added to Block/Model 2 to see if this subscale contributed significant unique variance in explaining personal growth.

As illustrated in Table 9, when entering comprehensibility and manageability together into the first model (e.g. first block of the regression analysis), neither comprehensibility \( (t=1.281, p=.202) \) nor manageability \( (t=.123, p=.902) \) emerged as significant predictors of personal growth for Model 1 \( (R=.160; R^2=.026; \text{Adj. } R^2=.012; R^2 \text{ Change}=.026; F(2,147)=1.938, p=.148) \). To test null hypothesis 3a, meaningfulness was added in Model 2 to determine if this subscale contributed significant unique variance in explaining personal growth. Results indicated that meaningfulness did not account for a significant additional proportion of the variance in personal growth above and beyond the variance accounted for by comprehensibility and manageability. Specifically, meaningfulness added only 1.8% to the overall model in explaining the variance in personal growth \( (R=.209; R^2=.044; \text{Adj. } R^2=.024; R^2 \text{ Change}=.018; F(1,146)=2.718, p=.101) \). Thus, meaningfulness was not a significant and unique predictor of personal growth \( (t=1.649, p=.101) \). Since the meaningfulness subscale did
not offer any statistically significant contribution above and beyond the other predictor subscales of comprehensibility and manageability in explaining personal growth, findings did not support rejecting null hypothesis 3a.

Table 9
*Hierarchical Regression Analysis Model Summary for Personal Growth*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Error</th>
<th>Beta</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>57.444</td>
<td>9.944</td>
<td></td>
<td>5.777</td>
<td>.000</td>
</tr>
<tr>
<td>Comprehensibility</td>
<td>.332</td>
<td>.259</td>
<td>.150</td>
<td>1.281</td>
<td>.202</td>
</tr>
<tr>
<td>Manageability</td>
<td>.036</td>
<td>.296</td>
<td>.014</td>
<td>1.123</td>
<td>.902</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>50.543</td>
<td>10.736</td>
<td></td>
<td>4.708</td>
<td>.000</td>
</tr>
<tr>
<td>Comprehensibility</td>
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<td>.266</td>
<td>.101</td>
<td>.839</td>
<td>.403</td>
</tr>
<tr>
<td>Manageability</td>
<td>-.173</td>
<td>.320</td>
<td>-.068</td>
<td>-.541</td>
<td>.589</td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>.520</td>
<td>.315</td>
<td>.181</td>
<td>1.649</td>
<td>.101</td>
</tr>
</tbody>
</table>

*Note.* Model 1: $R=.160$; $R^2=.026$; Adj. $R^2=.012$; $R^2$ Change=.026; $F(2,147)=1.938$, $p=.148$.
Model 2: $R=.209$; $R^2=.044$; Adj. $R^2=.024$; $R^2$ Change=.018; $F(1,146)=2.718$, $p=.101$.

**Null Hypothesis 3b.** After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will not contribute significant unique variance in explaining distress.

**Alternative Hypothesis 3b.** After controlling for the sense of coherence subscale variables of comprehensibility and manageability, meaningfulness will contribute significant unique variance in explaining distress.

To answer the third research question, and to test null hypothesis 3b, hierarchical regression was performed. The results of the hierarchical regression on distress are presented in Table 10. When entering comprehensibility and manageability together into
the first model (e.g. first block of the regression analysis), Model 1 was a significant predictor of distress ($R=.364$; $R^2=.132$; Adj. $R^2=.121$; $R^2$ Change=.132; $F(2,147)=11.217$, $p<.001$) and accounted for 13.2% of the overall variance in distress. Manageability emerged as the strongest predictor in Model 1 ($t=-3.265$, $p=.001$) whereas comprehensibility did not offer significant unique variance in explaining distress in Model 1 ($t=-.047$, $p=.962$). To test null hypothesis 3b, meaningfulness was added in Model 2 to determine if this subscale contributed significant unique variance in explaining distress above and beyond the variance explained by comprehensibility and manageability. Although Model 2 was a significant predictor of distress, $F(3, 146) = 7.458$, $p<.001$, results indicated that meaningfulness did not account for a significant additional proportion of the variance in distress above and beyond the variance accounted for by comprehensibility and manageability ($R=.365$; $R^2=.133$; Adj. $R^2=.115$; $R^2$ Change=.000; $F(1,146)=.082$, $p=.776$). Interestingly, manageability emerged as a significant and unique predictor of distress ($t=-3.101$, $p=.002$). Since the meaningfulness subscale did not offer any statistically significant contribution above and beyond the other predictor subscales of comprehensibility and manageability in explaining distress, findings did not support rejecting null hypothesis 3b.
Table 10
Hierarchical Regression Analysis Model Summary for Distress

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Error</th>
<th>Beta</th>
<th>T</th>
<th>P</th>
</tr>
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<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>71.248</td>
<td>8.107</td>
<td>8.788</td>
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<td>Comprehensibility</td>
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<td>.211</td>
<td>-.005</td>
<td>-.047</td>
<td>.962</td>
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<td>Manageability</td>
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<td>.241</td>
<td>-.360</td>
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<td>.001</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
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<td>.000</td>
<td></td>
</tr>
<tr>
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<td>-.013</td>
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<td>.908</td>
</tr>
<tr>
<td>Manageability</td>
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<td>.264</td>
<td>-.374</td>
<td>-3.101</td>
<td>.002</td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>.074</td>
<td>.259</td>
<td>.030</td>
<td>.285</td>
<td>.776</td>
</tr>
</tbody>
</table>

Note. Model 1: R=.364; R^2=.132; Adj. R^2=.121; R^2 Change=.132; F(2,147)=11.217, p<.001.
Model 2: R=.365; R^2=.133; Adj. R^2=.115; R^2 Change=.000; F(1,146)=.082, p=.776.

Summary of Main Findings

Results reflecting correlations among primary variables (e.g. sense of coherence, personal growth, distress) yielded the following: there was a significant positive correlational relationship between sense of coherence and personal growth, there was a significant and inverse correlational relationship between sense of coherence and distress, and there was not a significant correlational relationship between personal growth and distress.

In regards to canonical correlation analysis, results indicated one significant canonical function with sense of coherence and breakup timeline making the most important contributions towards explaining the variance in the Personal/Relationship Characteristics variate and personal growth and distress both making contributions toward the Adjustment Factors variate with distress making the greatest contribution towards explaining the variance in the Adjustment Factors variate. After the structure
coefficients were examined, results revealed that those participants with a greater sense of coherence and a longer timeline since the breakup occurred tended to report having more personal growth and less distress.

Summarizing both regression analyses, meaningfulness did not contribute significant unique variance in explaining either personal growth or distress. However, manageability emerged as being able to explain differences in distress (but not personal growth). Chapter 5 elaborates on the aforementioned results. Interpretations of results as well as implications of the current study are discussed. Additionally, both limitations of the current study as well as suggested future directions for research are outlined.
CHAPTER V

DISCUSSION

Introduction

Chapter V provides a discussion of findings in the present study. Included in this discussion are the following: (1) Relationships among Sense of Coherence, Personal Growth, and Distress; (2) Relationships among Personal/Relationship Characteristics and Adjustment Factors; (3) Relationships among SOC subscales (comprehensibility, manageability, meaningfulness) and personal growth and distress; (4) Implications of the Current Study; (5) Limitations of the Current Study; and (6) a Summary. Each of these areas will be discussed with attention to the findings of the present study and with consideration of the three primary research questions outlined in the study. Additionally, relevant literature will be briefly outlined throughout this chapter to provide a context for explaining and supporting the research findings. Suggestions for future studies will be incorporated throughout the chapter as well. The primary purpose of this study involved exploring the relationships among sense of coherence, personal growth, and distress endorsed by college students following a nonmarital relationship breakup. Of particular importance was investigating the role of sense of coherence and its relationship to post breakup adjustment.

Sense of Coherence, Personal Growth, and Distress

The following information summarizes the relationships among the three primary variables (sense of coherence, personal growth, distress), as explored through Pearson $r$ correlations with respect to Research Question 1: What are the relationships among sense of coherence, personal growth, and distress reported after a relationship breakup?
Sense of Coherence and Personal Growth

As noted previously, sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges worthy of investment and engagement (Antonovsky, 1987). The present study added to the sense of coherence knowledge base in regards to personal growth, as most studies have not investigated personal growth directly; rather, studies have primarily focused on sense of coherence levels and the relationship to distress, quality of life, and health outcomes of various stressful experiences (Eriksson & Lindstrom, 2005, 2006). Results of the present study indicated that sense of coherence was significantly and positively correlated with personal growth. Those who endorsed higher scores on the Life Orientation Questionnaire (OLQ, Antonovsky, 1987) tended to endorse higher scores on the Posttraumatic Growth Inventory (PTGI, Tedeschi & Calhoun, 1996). The finding that a stronger sense of coherence is associated with more personal growth is consistent with the literature, as sense of coherence has been associated with positive benefits after difficult life circumstances and losses (Eriksson & Lindstrom, 2005, 2006).

There are several potential reasons why, based on the current study, that a stronger sense of coherence might be associated with greater personal growth after a breakup. Results seem to support the idea that those with stronger sense of coherence were able to view their breakup stresses as worthy of investment, make sense of their lost partnership, and mobilize appropriate resources to help them accrue benefits (i.e., personal growth) from the loss. Thus, individuals who possessed a coherent system from
which to reflect upon their breakup may have been better enabled to find ways of
benefitting from their loss. This finding is consistent with Antonovsky’s (1987)
contention that individuals with higher sense of coherence are generally able to select and
implement appropriate and effective coping strategies. Perhaps finding and developing
personal growth after a loss encompasses such a strategy. Conversely, persons with low
sense of coherence may have lacked the requisite skills, resources, and capacity for
meaning-making as a means of coping; therefore, they may have experienced difficulty in
perceiving/experiencing something positive after the breakup, thus negatively impacting
their ability to accrue personal growth.

The significant positive correlational relationship between sense of coherence and
personal growth, as evidenced by results in the current study, makes intuitive sense as
well. The personal growth literature regards sense of coherence as a concept containing
similar elements, in that both personal growth and sense of coherence are constructs
which enable persons to cope successfully with adverse life events (Tedeschi & Calhoun,
1996). Specifically, sense of coherence provides an organized, meaningful orientation
with which to interpret and respond to challenging life situations (Antonovsky, 1987). It
seems plausible that those possessing stronger sense of coherence were able to accrue
more personal growth, as they likely possessed a solidified system for making sense of
and deriving meaning from their breakup. By having a system for meaning-making, they
were likely better enabled to “benefit” from their adverse situation and find personal
growth after their breakup.

Results also supported suppositions and findings in the posttraumatic growth
literature that loss and adversity can potentially serve as the impetus for increased
individuals the opportunity to develop personal growth and, subsequently, their sense of coherence may have been strengthened when this new coping strategy (i.e., recognition of personal growth) was introduced. Thus, personal growth may reflect another type of generalized resistance resource. As such, the current study offered support for Antonovsky’s concept of generalized resistance resources. As noted in Antonovsky (1979), GRRs encompass “any characteristic of the person, the group, or the environment that can facilitate effective tension management” (p. 99). Thus, GRRs assist individuals with making sense of stressors and stimuli they experience which, in turn, may result in the development of a stronger sense of coherence. It can be conjectured that participants in the current study who endorsed greater personal growth were able to utilize personal growth as a means of effective tension management (i.e., managing distress post-breakup by considering various gains accrued post-breakup as opposed to solely focusing on the loss of the relationship), thus contributing towards a stronger sense of coherence. Reciprocally, a stronger sense of coherence might have helped those experiencing a breakup to select appropriate and available GRRs to deal with their loss. Perhaps individuals in the current study with high sense of coherence were able to select an appropriate generalized resistance resource (i.e., stronger support systems and relationships, discovery of emotional/spiritual strength, deeper sense of self and identity) and apply this newfound knowledge to their breakup. The significant and positive correlation between sense of coherence and personal growth makes sense when considering the sense of coherence and personal growth constructs. The Posttraumatic Growth Inventory (PTGI; Horowitz et al., 1979) subscales seem to be reflective of various GRRs that might help bolster individuals’ sense of coherence. For instance, the Personal Strength PTGI subscale seems to reflect the Cognitive-Emotional Strength
GRR, as both describe increases in self-awareness and ego strength. Additionally, the Relating to Others PTGI subscale seems to share similarities with the Interpersonal-relational GRR, as both reflect the development and maintenance of close interpersonal relationships and support networks. Given these commonalties among the PTGI subscales and sense of coherence, it seems likely that, if sense of coherence increases, personal growth will increase as well.

Results of the current study added relevant information to the sense of coherence, personal growth, and breakup literature. While Eriksson and Lindstrom (2005, 2006) noted in their systematic review of sense of coherence studies that sense of coherence generally predicts a positive outcome in a long-term perspective, there was a paucity of research exploring sense of coherence specifically in relation to personal growth. Additionally, sense of coherence had not been examined in respect to the breakup literature, as the investigator could not find research exploring how sense of coherence related to relationship breakups. Thus, the present study added both to the relationship breakup literature and personal growth literature by exploring the role sense of coherence offered in these areas.

While the current study focused on sense of coherence in relationship to personal growth as a unitary construct and found a significant positive correlational relationship, future studies might expand upon these findings by investigating which aspects of personal growth (i.e., which PTGI subscales) are most highly correlated with sense of coherence. Additionally, future studies might explore which specific aspects of personal growth (i.e., PTGI subscales) are best predictors of sense of coherence to help further elucidate the relationship between these two constructs. Future studies could also explore the relationship between sense of coherence and personal growth over time.
Perhaps personal growth and positive benefits require time to “take effect” and become integrated into one’s life, as benefit-making may be a long-term process that unfolds over time.

**Sense of Coherence and Distress**

Results of the current study indicated that sense of coherence demonstrated a significant negative correlational relationship with distress. Thus, persons with higher levels of sense of coherence were more likely to report experiencing less distress post-breakup. This finding supported the extant research base, suggesting that sense of coherence is related to less distress after a stressful life event (Eriksson & Lindstrom, 2005, 2006). Furthermore, the current study offered support for breakups representing another stressful event for which a strong sense of coherence might offer utility in alleviating distress. This support is particularly important, as the existing sense of coherence literature has not addressed the role of sense of coherence in post-breakup distress. Findings of the present study suggested that individuals who were able to understand, resolve, and cope with the breakup (i.e., possessed a higher sense of coherence) were better equipped with supportive resources (i.e., possessed a greater sense of manageability) to alleviate their distress after their relationship dissolved.

Results also offered support for the salience of perceived controllability in relating to distress post-breakup, as perceptions of controllability have been highlighted in the relationship breakup literature and have been associated with post-breakup distress (Frazier & Cook, 2003; Helgeson, 1994a; Sprecher, 1994). For instance, Frazier and Cook (2003) reported that perceived controllability was significantly related to both initial and current distress in a sample of college students experiencing a breakup and emerged as a significant and unique predictor of post-breakup distress. Those expressing
a greater sense of control regarding the breakup tended to be better adjusted. Perhaps a stronger sense of coherence, particularly a greater sense of manageability, allows persons to feel a greater sense of control post-breakup, as Antonovsky (1987) noted that individuals with stronger sense of coherence are better enabled to access appropriate coping resources and understand their stressor. In support, results revealed that the manageability subscale was a significant and unique predictor of post-breakup distress.

Since sense of coherence seems to reflect perceptions of control (i.e., a person’s ability to understand a perceived stressor, marshal and manage appropriate resources, derive meaning), it can be conjectured that persons with stronger sense of coherence might experience greater perceived controllability about effectively coping with the relationship breakup. Therefore, those possessing stronger sense of coherence might be inclined to report less distress post-breakup. As such, individuals with higher sense of coherence scores in the present study might have possessed greater perceived controllability post-breakup and, subsequently, reported less distress. Perhaps sense of coherence enabled individuals post-breakup to marshal interpersonal and intrapersonal resources in order to feel a personal sense of control and agency in coping with the breakup. Conversely, participants with lower sense of coherence scores in the present study might have felt they were lacking necessary resources, thus feeling less control over their situation and more distress. Given that stronger sense of coherence is believed to be linked with individuals employing more adaptive coping strategies and, often, coping strategies indicative of problem-solving (Amirkhan & Greaves, 2003; Antonovsky, 1987; Eriksson & Lindstrom, 2005, 2006), it makes sense that there would be a significant negative correlational relationship between sense of coherence and distress in the current study. Since distress was measured using the intrusion and
avoidance subscales of the Impact of Event Scale (Horowitz et al., 1979), it seems reasonable to expect that individuals high on distress (thus endorsing high avoidance/intrusion) might have lower sense of coherence scores. For instance, higher distress would likely reflect more avoidance and intrusion in dealing with the breakup as opposed to a problem-solving centered approach. Since the sense of coherence and distress measures used in this study appear to reflect opposing coping strategies (problem-solving versus avoidance), their significant negative correlational relationship makes intuitive sense.

It is interesting to consider how time may have impacted the relationship between sense of coherence and distress. While there was a significant negative correlational relationship between sense of coherence and distress in the current study, perhaps those with higher distress and lower sense of coherence at the time of participation in the current study could develop higher sense of coherence months after the time of data collection. In support, Antonovsky (1987) noted that, by encountering difficult stressors, individuals are able to supplement their sense of coherence as they are afforded the opportunity to develop greater generalized resistance resources. He underscored the importance of encountering adversity in developing a strong sense of coherence, as he believed that adversity could serve as the impetus for building up a repertoire of coping skills, leading to a stronger sense of coherence (Antonovsky, 1990a). Relating Antonovsky’s suppositions to the current study, it is possible that those endorsing higher sense of coherence may have experienced prior adversities, thus bolstering their current sense of coherence in coping with the breakup. In a similar vein, those with lower sense of coherence scores at the time of the study might have had fewer opportunities to
strengthen their sense of coherence; however, their current breakup could provide an opportunity for developing a stronger sense of coherence.

Since the relationship between relationship breakups, sense of coherence, distress, and time has not been investigated, future studies could explore if and how sense of coherence and distress evolve over time after a difficult breakup. Thus, future research might explore longitudinal data on the participants several months after the breakup. Continuing to explore the relationship between sense of coherence and distress post-breakup is warranted, particularly in regard to how time might impact both constructs.

**Personal Growth and Distress**

Research on personal growth and distress is quite inconsistent in terms of describing the nature of the relationship between these constructs. Some studies have reported that distress and growth coexist but are not correlational in nature (Tedeschi & Calhoun, 1995, 1996; Tomich & Helgeson, 1994), whereas other studies have indicated that personal growth is associated with less distress (Cordova, Cunningham, Carlson, & Andrykowski, 2001). Still others have noted that individuals who experienced more objectively stressful events reported more personal growth (Weinrib et al., 2006).

Findings in the current study indicated no significant correlational relationship between personal growth and distress. Thus, it is consistent with researchers who suggested that there is no significant relationship between posttraumatic growth and distress, as they are essentially distinct constructs (Cordova et al., 2007; Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003; Tedeschi & Calhoun, 1995). This finding is also consistent with Tedeschi and Calhoun’s (1995) contention that posttraumatic growth is not the absence of suffering or the disappearance of distress, but rather is manifested as a
greater appreciation for life, increased meaning in interpersonal relationships, enhanced sense of self and personal strength, renewed purpose and direction in life, and increased sense of spirituality. In a meta-analysis of benefit finding and personal growth after loss, findings revealed that personal growth was more than just the absence of distress (Helgeson, et al., 2006). Results indicated that benefit finding/personal growth was, in general, unrelated to measures of global distress but was related to greater optimism. In explaining the lack of a significant correlational relationship between personal growth and distress, it may be helpful to consider participants’ overall reports of distress. Perhaps participants, regardless of their level of personal growth, experienced similar levels of distress. Thus, a significant correlational relationship between personal growth and distress would not be expected to emerge. Intuitively, the findings make sense since experiencing intense distress does not necessarily mean that individuals will accrue personal growth. In a similar vein, experiencing intense personal growth does not necessarily mean that individuals’ distress will be alleviated. Perhaps both occur simultaneously, and shifts in personal growth and distress are related to other personal characteristics of individuals (i.e., sense of coherence, optimism) or environmental factors (i.e., social support) rather than to each other.

Future research might explore the constructs of personal growth and distress independently, examining each of their respective components in greater depth. It may also be helpful to explore how personal growth and distress may change at different points in time after a breakup. Thus, more longitudinal studies exploring individuals’ reported personal growth and distress post-breakup at multiple points in time is suggested. As Helgeson et al. (2006) aptly sum “…the process of growth may be multifaceted, with effects on psychological and physical health that change over time” (p.
Qualitative studies could explore these constructs in other ways such as describing specific ways in which individuals experience personal growth and how acquired personal growth may alleviate (or fail to alleviate) distress.

**Relationships among Personal/Relationship Characteristics and Adjustment Factors**

The following section attends to Research Question 2: What is the nature of the relationships between the Personal/Relationship Characteristics variable set (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) and the Adjustment Factors variable set (personal growth, distress)? The section also incorporates a discussion of relationships among these Personal/Relationship Characteristics as well as their relationship to the variable of breakup impact (as assessed by a 7-point Likert scale on the Demographic Information Questionnaire).

Results of the current study revealed that individuals endorsing higher sense of coherence and reporting a longer breakup timeline (i.e., time elapsed since breakup initially occurred) tended to report experiencing more personal growth and less distress post-breakup. Findings in the current study offered support for research emphasizing the relevance of timeline in considering post-breakup distress. For instance, research has indicated that the time elapsed since the relationship terminated may be an important factor in recovery from breakup heartache, as time has been positively correlated with the belief that a romantic relationship is over (Sorenson et al., 1993). Additionally, Knox et al. (2000) found that passage of time was identified as one of the most helpful factors in college students’ recovery from a breakup. Furthermore, Moller et al. (2003) reported that timeline was a significant predictor of distress and loneliness for college students enduring a breakup within the past year. In an exploration of factors associated with distress post-breakup, Sprecher et al. (1998) noted that the less time elapsed since the
breakup, the more distress brokenhearted college students endured. Findings in the current study are consistent with the aforementioned literature, as a longer breakup timeline was associated with more personal growth and less distress subsequent to the breakup.

Findings in the present study underscored the importance of considering both personal growth and distress factors in relation to Personal/Relationship Characteristics (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant). These results are particularly salient, as the relationship breakup literature is bereft of studies exploring both personal growth and distress subsequent to a breakup. The current study offered support for considering personal and relationship variables as well as adjustment variables (personal growth, distress) simultaneously as opposed to investigating these factors individually in relation to post-breakup adjustment.

Results highlighted the importance of considering breakup timeline and sense of coherence when exploring adjustment after a relationship breakup. Intuitively, this seems reasonable as distress may wane with the passage of time and strong sense of coherence may enable individuals to respond to distress more effectively and accrue personal growth. Perhaps the passage of time affords individuals opportunities to mobilize social support, derive meaning from their breakup, embark on various satisfying life adventures, or pursue other relationships (thus helping to alleviate distress). Since canonical correlation analysis results revealed that breakup timeline and sense of coherence considered together showed a relationship to personal growth and distress, it is important to consider both variables together rather than individually.

It would be interesting for future studies to explore these Personal/Relationship Characteristics (sense of coherence, breakup timeline, relationship length, initiator status,
sex of participant) to other adjustment variables such as levels of anxiety, depression, and hopelessness reported subsequent to a breakup. Additionally, future studies might explore these Personal/Relationship Characteristics and Adjustment Factors in qualitative inquiry. For instance, what are individuals’ perceptions about how Personal/Relationship Characteristics relate to one another and to Adjustment Factors? Furthermore, since breakup timeline appears to be an important variable related to adjustment, future studies might explore adjustment at various intervals post-breakup.

**Relationship Variables of Interest**

Although the Personal/Relationship variables and Adjustment Factors should be considered in relationship to one another it is interesting to examine the relationships among select Personal/Relationship variables, Adjustment Factors and other variables of interest that have been the focus of attention in the literature. There have been three specific variables in the breakup literature that have been the focus of substantial attention including: relationship length, initiator status, and sex of participant. Findings with respect to these three variables are now considered and discussed.

**Relationship length.** Results for the present study revealed that relationship length (i.e., the duration of the relationship before breakup) did not significantly correlate with distress or personal growth. This suggests that there was not a significant connection between the length of time participants were in a relationship and their adjustment post-breakup. This finding is consistent with Helgeson’s (1994a) findings that relationship longevity was not related to post-breakup adjustment in either male or female college students. Additionally, results of the current study are also consistent with Fine and Sacher’s (1997) research investigating predictors of distress following a relationship dissolution. Their results revealed that higher levels of commitment before
the breakup and fewer perceived alternative partner opportunities post-breakup predicted greater post-breakup distress. Relationship length did not emerge as a significant predictor of distress; rather, results suggested that the level of investment in the relationship was related to overall distress.

However, it is important to note that results of the current study are not consistent with findings in some studies in the breakup literature, such as those that have revealed a significant relationship between relationship length and post-breakup adjustment. Specifically, a longer relationship length has been associated with greater distress post-breakup (Kaczmarek et al., 1990; Simpson, 1987; Sprecher et al., 1998) as well as better adjustment (Frazier & Cook, 1993). In trying to understand the lack of a significant correlation between relationship length and distress, it might be helpful to consider other aspects of the relationship. Perhaps other aspects of the relationship moderate the correlation with relationship length. For example, Frazier and Cook (1993) found that commitment-related variables such as satisfaction, closeness of relationship, and perceived unavailability of alternative partners were associated with higher distress post-breakup when compared with relationship length, though these correlations were not statistically significant. This research might help explain why the present study did not find a significant correlation between relationship length and distress.

Interestingly, while relationship length was not found to significantly correlate with distress or personal growth in the current study, relationship length was significantly and positively correlated with reported impact. Individuals who had endorsed longer involvement in a relationship were more inclined to describe their relationship breakup as having been significantly impactful. In fact, 84.6% (n=127) of participants regarded their breakup as moderately to significantly impactful. Thus, participants tended to view their
breakups as significant events, rather than losses that could be easily dismissed and viewed as having a minimal impact on their lives. Intuitively these results make sense as one might expect that, with a longer relationship, individuals would experience more investment and commitment. Therefore, when the relationship dissolves, individuals might experience deeper sense of loss and greater subsequent impact. Another reason for the significant correlation between relationship length and impact might reflect the developmental tasks college students are negotiating, such as intimacy versus isolation (Erikson, 1966) and developing mature interpersonal relationships (Chickering & Reisser, 1993). Since the young adults experiencing breakups in the current study were mostly traditional college students (mean age was about 21), it is likely that they were negotiating interpersonal/relational developmental tasks. Thus, when asked about the impact of their breakup, they may have been more inclined to regard their breakups as impactful if they had attempted to forge a long-term mature relationship.

**Initiator status.** Since the relevance of initiator status has been both supported and repudiated in the extant literature, the present study examined whether initiator status was significantly related to the personal growth and distress endorsed post-breakup. Results indicated that there were no statistically significant differences between initiator status and personal growth or between initiator status and distress. Thus, initiators of the breakup and recipients of the breakup tended to reports similar levels of personal growth and distress. Moreover, when considering several predictor variables (sense of coherence, breakup timeline, relationship length, initiator status, sex of participant) in the canonical model, initiator status did not emerge as a significant contributor in explaining the Personal/Relationship Characteristics variate. This finding suggests that initiator status may not be as significant as originally thought. Thus, findings in the present study
did not support the contention that relationship dissolutions may be particularly difficult for the recipients as opposed to the initiators of the breakup (Frazier & Cook, 1993) and that recipients report more distress in comparison to initiators (Sprecher, 1994; Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998). Instead, results suggested that other personal/relationship characteristics might be more salient when considering college student breakups.

**Sex of participant.** The present study supported the contention that males and females do not differ in their reports of “feeling bad” post-breakup as there were no significant differences in distress based on sex of participant. Thus, females and males reported similar levels of distress post-breakup. Additionally, there were no significant differences in personal growth based on sex of participant, indicating that females and males reported similar levels of personal growth post-breakup. Choo et al.’s (1996) finding that men were less inclined to report “positive” feelings post-breakup was not supported in the present study. Additionally, Tashiro and Frazier’s (2003) research indicating that women endorsed more personal growth post-breakup was also not supported by the present study.

Interestingly, in the present study, there were statistically significant sex differences in regards to breakup impact. Specifically, females regarded their breakups as more significantly impactful than males. Perhaps females are more inclined to acknowledge that their breakup had a significant impact due to gender role norms about females being permitted to express their feelings. Conversely, males may have been more reticent to explicitly admit that they were affected by the breakup. Perhaps males experienced gender role constrictions and pressure to remain stoic afterwards. While sex differences emerged in regards to relationship breakup impact ratings, no significant sex
differences emerged in the present study in regards to sense of coherence. This is fairly consistent with the literature. Eriksson and Lindstrom (2005) noted in a systematic review of over 458 scientific publications and 13 doctoral theses investigating sense of coherence that, while males tended to endorse higher sense of coherence scores across studies, this difference was very small.

_Sense of Coherence Subscales_

While sense of coherence was significantly and positively correlated with personal growth, findings revealed that the regression analyses predicting personal growth using the sense of coherence subscales for both Model 1 (comprehensibility and manageability) and Model 2 (comprehensibility, manageability, and meaningfulness) were not statistically significant. Thus comprehensibility, manageability, and meaningfulness did not emerge as significant unique predictors of personal growth post-breakup. The finding that the meaningfulness subscale did not offer a statistically significant contribution above and beyond the other subscales (comprehensibility and manageability) in explaining personal growth subsequent to a breakup contrasts Antonovsky’s (1987) supposition regarding the subscales. In other words, the present study failed to support Antonovsky’s (1987) supposition that the meaningfulness component was the most crucial of the three subscales; instead, findings supported the idea that sense of coherence should be interpreted in its totality.

In regards to sense of coherence subscales and distress, regression analyses revealed that both Model 1 (comprehensibility and manageability) and Model 2 (comprehensibility, manageability, meaningfulness) were significant predictors of distress post-breakup. Thus, the sense of coherence subscales appear to be predictive of distress. While the overall model was predictive of distress, meaningfulness was not
found to be a significant unique predictor of distress. The relatively short length of time between breakup and participation in the current study may explain why the meaningfulness scale did not emerge as a significant unique predictor of distress. Perhaps accessing and applying meaningfulness occurs later in the breakup process but is not integral to initial distress and adjustment. Instead, manageability may be paramount initially after a breakup. Results in the present study revealed an unexpected finding: manageability emerged as a significant and unique predictor of distress following a breakup after all three sense of coherence subscales were considered in relation to distress. These findings seem to suggest that the manageability aspect of sense of coherence may be more important than Antonovsky previously assumed. Perhaps the importance of manageability in the present study supports the utility of sense of coherence in helping individuals feel a sense of personal control and empowerment. As noted by Antonovsky (1987), manageability encompasses individuals’ recognition of available resources as well as their belief that they have the capacity to mobilize intrapersonal and interpersonal resources to cope with a stressor. It can be conjectured that, to the extent that individuals can mobilize appropriate resources, they may feel more empowered and “in control” of their stressor, such as a breakup. Findings in the current study supporting the salience of the manageability subscale suggest that helping persons identify and access personal and external resources shortly after a breakup may be helpful in alleviating distress. Perhaps those that are grieving the loss of their breakup need to believe that they have the resources to directly cope with and manage their loss. Alleviating distress might necessitate bolstering individuals’ sense of personal control. Thus, mental health practitioners working with individuals similar to those in the present
study might consider interventions that attend to clients' sense of manageability post-breakup.

Future studies might continue to explore the importance of the sense of coherence subscales in predicting adjustment post-breakup. Future investigation of sense of coherence in relation to post-breakup adjustment is recommended to help better ascertain whether sense of coherence subscales are significant and unique predictors of adjustment post-breakup or if the gestalt (i.e., total sense of coherence score) is more important than the individual subscales. Since the present study is the only known study that has explored sense of coherence subscales in relationship to adjustment post-breakup, it is prudent to refrain from drawing specific conclusions about the relative importance of each subscale until further research on sense of coherence subscales and relationship breakup adjustment is conducted.

**Implications of the Current Study**

Further exploration of nonmarital breakups in college settings is important, as romantic relationship breakups are among the most common presenting concerns in the counseling center milieu (Benton, Robertson, Tseng, Newton, & Benton, 2003; McCarthy et al., 1997). Results of the current study underscored the impact that relationship breakups may have on college students as evidenced by the distress, impact, and personal growth reported post-breakup. Results also highlighted the importance of continuing to explore potential reasons why college students experience breakups as quite distressing.

As supported by findings in the current study, sense of coherence and breakup timeline appear to offer potential utility in alleviating distress and promoting personal growth after a relationship breakup. Thus, possessing an intact system for understanding
a breakup as well as allowing time for the healing process to occur post-breakup seemed to be related to healthy adjustment. In order to facilitate better adjustment post-breakup, it seems helpful for mental health professionals working with college students to consider ways in which they might bolster students' sense of coherence. Perhaps counseling might focus on building individuals' sense of understanding, control, and sense of meaning after enduring a breakup. It may be helpful for counselors to assist individuals with developing a greater sense of control and manageability post-breakup, as this type of loss may engender feelings of lost control. Perhaps by exploring specific coping strategies, identifying intrapersonal resources (e.g. sense of humor, intelligence, perseverance) and interpersonal strengths (e.g. close friendships, supportive family, religious affiliations), and devising a plan for accessing resources, individuals might be better enabled to experience a sense of control post-breakup through a greater sense of manageability.

Since understanding and making sense of a stressor encompasses an important aspect of sense of coherence, it may be helpful for counselors to explore and strengthen students' understanding of the breakup as well. As Janoff-Bulman (1989; 1992) noted, losses can significantly impact persons' assumptions and views of the world. Thus, after a significant loss, an understandable world may suddenly seem quite inexplicable. In order to foster individuals' sense of coherence post-breakup, it is essential to help them understand their breakup and make sense of their situation. For instance, students might be encouraged to consider reasons their breakup dissolved. Counselors might assist college students with exploring what role they assumed in contributing towards the breakup, how their partner contributed towards its termination, and aspects of the relationship itself that led to its dissolution. Perhaps by attending to potential reasons the
relationship failed to last, individuals can make sense of the loss and feel less distressed. Thus, rather than viewing the breakup as “random” and “uncontrollable,” college students experiencing a breakup might find reasonable “causes” and “warning signs” they can use to explain their loss. Additionally, these “warning signs” might assist clients with future romantic endeavors as they may be more cognizant of what facilitates connection in a relationship and what contributes towards dissolutions. Increased sense of coherence may also relate to greater personal growth, as students enduring a breakup may better understand their world, their relationships, and their strengths and use this newfound knowledge to increase their appreciation of life, relationships, and their own value in the world. The breakup may serve as an impetus for self-improvement as well as relationship-improvement once persons understand various aspects of the breakup.

Additionally, since the present study offered support for considering breakup timeline in relation to post-breakup adjustment, it may be useful for counselors to consider how time elapsed since a breakup might relate to one’s post-breakup adjustment. Since findings in both the present study as well as the extant literature have supported the relevance of both personal and relationship variables in relating to adjustment, it seems important to help individuals recognize that difficulties with adjustment are not only reflective of personal characteristics, but that contextual factors such as time may also be influencing their adjustment to a breakup.

Since research is limited with regard to exploring both personal growth and distress after a relationship breakup, future studies might investigate these areas in more depth. Specifically, it may be helpful to explore which aspects of personal growth college students find most useful post-breakup and which aspects of their distress feel most taxing. Additionally, longitudinal studies examining personal growth and distress
at various times post-breakup may help mental health professionals better understand the adjustment process following breakups. Since the present study reflected only one side of the relationship breakup (i.e., one partner’s perception/experience), exploring both sides of a relationship breakup (with regard to personal growth, sense of coherence, and distress) may yield useful information about how partners in a relationship may respond differently (or similarly) to the same breakup. Future studies on relationship breakups might also focus on incorporating additional measures of distress to help supplement the IES. Rather than focusing solely on avoidance and intrusiveness of thoughts as determinants of distress, additional measures might account for other important aspects of distress experienced post-breakup. Finally, qualitative designs might provide a more in-depth account of sense of coherence, distress, and personal growth college students endorse post-breakup.

**Limitations of the Current Study**

While findings in the current study offer support regarding the impact of relationship breakups on college students’ lives as well as the relevance of sense of coherence in relation to post-breakup distress and personal growth, there are limitations of the current study as well. First of all, in regards to limitations of the participant sample, generalizability is restricted to primarily heterosexual, Caucasian college students. Thus, results may not be applicable to students experiencing same-sex relationship dissolutions or those from diverse racial backgrounds. Future studies might explore both commonalities as well as differences in breakup experiences between those persons involved in heterosexual relationship dissolutions and those involved in dissolved same sex unions. Additionally, future students might use purposive sampling to include individuals from diverse cultural and racial backgrounds in an effort to
determine how race might relate to different scores on the instruments. Another limitation concerning participants involved individuals’ self-selection as participants; thus, a nonrandom sample was used. Individuals who expressed an interest in participating in the study may have been more inclined to have experienced a stronger reaction to their breakup or to have had experienced more personal growth. Perhaps individuals who self-selected to participate in the study had stronger feelings about their breakups and, therefore, may not be representative of the general population in regards to adjustment after a relationship breakup.

With respect to the research design, results were primarily correlational in nature. Thus, causal factors concerning personal growth and distress post-breakup cannot be stated. Rather, the findings of this study are suggestive of relationships among the variables and caution is advised when interpreting the results. Significant correlations among primary variables, although statistically significant, were small in magnitude and require replication. Additionally, data were collected and analyzed from one point in time. Perceptions of personal growth, distress, and sense of coherence may differ at various points in time post-breakup, as evidenced by the contribution of breakup timeline. Future studies might include longitudinal designs to examine relationships among the variables over time.

Another limitation involves the use of self-report measures in the study. All instruments used in the current study reflected self-report measures. In regards to the Orientation to Life Questionnaire (OLQ; Antonovsky, 1987), limitations of this measure reflect the lack of consensus regarding what constitutes “high”, “moderate,” and “low” scores (Eriksson & Lindstrom, 2006). Thus, with no established criteria for “high/strong” scores and “low/weak” scores, it is difficult to draw specific comparisons
about characteristics of high scorers, moderate scorers, and low scorers, across studies. Another limitation noted by the researcher in the present study reflects the Likert scale measurement used in this instrument. Since all responses are anchored by two extreme scores (1 and 7), and the scale anchors are only offered for the two extreme scores, it is difficult to determine how respondents interpret and select those responses between the anchors (e.g. responses “2” through “6”). For instance, one respondent might have a different set of criteria regarding what a response of “4” reflects when compared with another respondent’s “4” criteria.

While the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) has been regarded as a psychometrically sound measure, there are some limitations as well as criticisms of the instrument. Tedeschi and Calhoun (1996) acknowledged criticisms about the PTGI measuring subjective experiences of posttraumatic growth. Some individuals might experience significant qualitative shifts in assumptions and, subsequently, report significant quantitative posttraumatic growth (regardless of whether this growth has actually occurred or is merely perceived to have occurred). Thus, PTGI scores may be unrelated to actual growth from pre to post-trauma (Frazier, Tennen, Gavian, Park, Tomich, & Tashiro 2009). Since this instrument is a retrospective self-report measure individuals must recall how they were before the traumatic event in comparison to how they are now. This task can be quite complicated and persons might underestimate their previous assumptions/beliefs, thus resulting in attributing greater posttraumatic growth to an event. Another concern involves the concept of posttraumatic growth itself. Some researchers argue that posttraumatic growth represents a positive illusion and way of thinking (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000; Taylor, 1983) or a coping process (McMillen & Cook, 2003) rather than measuring an
actual change in assumptions and beliefs (Tedeschi & Calhoun, 1996). Thus, individuals may report increased posttraumatic growth because they want to believe changes have transpired, feel compelled to state to others that they have experienced some growth after adversity, or want to see themselves as faring better than others.

While the Impact of Event Scale (IES; Horowitz et al., 1979) appears to be a sound measure and widely used in psychological literature, it is important to outline a main limitation of this measure. The major criticism of the IES involves the self-report measurement of avoidance, as individuals are only able to report their conscious awareness of avoidance. Thus, the scale may not accurately reflect avoidance, as individuals may use strategies they are unaware of and, subsequently, neglect to report those strategies due to a lack of cognizance regarding the strategies. Similarly, persons who are experiencing significant denial of a trauma may underreport associated symptoms.

**Summary**

Sense of coherence appears to offer utility in explaining personal growth and distress after a relationship breakup. The current study found that higher sense of coherence and a longer breakup timeline (i.e., time passed since breakup) related to greater personal growth and less distress with regard to college student relationship breakups. These findings underscored the importance of developing and maintaining a “meaning-making” system (such as sense of coherence) following a significant loss such as nonmarital relationship breakups. Despite, Antonovsky’s supposition that the meaningfulness scale was the most salient SOC subscale, meaningfulness was not found to be a unique and significant predictor of personal growth or distress in the present study. While no significant and unique predictor subscale emerged in regards to personal
growth, interestingly, the manageability subscale of sense of coherence emerged as a significant and unique predictor of distress. Discussion focused on several Personal/Relationship variables outlined in the literature as potentially impacting adjustment after relationship breakups including: sex of participant, breakup timeline, relationship length, and initiator status. When considering the relationship among Personal/Relationship Characteristics and Adjustment Factors, results indicated that persons with higher sense of coherence and a longer timeline since the breakup occurred were more likely to report greater personal growth and less distress.

Possible research implications and directions for future research were outlined and discussed. While the relationship between sense of coherence and personal growth and sense of coherence and distress was significant, the relationship between personal growth and distress was not significant. It is recommended that future studies explore the relationship between personal growth and distress, as these constructs appear to be multifaceted and complex. Additionally, the relationship between sense of coherence and personal growth and sense of coherence and distress in regards to relationship breakups appears to be a potentially informative area that may benefit from future research.

Research on college student relationships and breakups warrants continued exploration, as breakups during this developmental period appear to be quite impactful.
REFERENCES


Appendix A

Demographic Information Questionnaire
DEMOGRAPHIC INFORMATION QUESTIONNAIRE

The following questions ask you to provide information about a romantic relationship breakup you have experienced within the past 2 years. Please consider one specific romantic relationship breakup that you have experienced within the past 2 years that has had some significant impact on you/your life as you respond to questions on this instrument. As a reminder, please use the SAME significant relationship breakup on all instruments that require you to reflect upon a relationship breakup. Also, please complete all 4 survey instruments in one sitting. In order to maintain the anonymity of your responses, please do not provide any personally identifying information on any of the survey materials.

Please answer all of the following questions by filling in the blank or circling the choice that best describes you/your experiences.

A. Sex (please circle)
   1. Male
   2. Female

B. Age: _________

C. Race/Ethnicity (please circle only one option)
   1. American Indian or Alaskan Native
   2. Asian or Pacific Islander
   3. African-American/Black, not of Hispanic origin
   4. Hispanic
   5. White, not of Hispanic origin
   6. Bi-racial/ Multi-racial (please specify): ________________________________
   7. Other (please specify): ________________________________

D. Sexual Orientation (please circle)
   1. Bisexual
   2. Gay male
   3. Heterosexual
   4. Lesbian
E. Student Status (please circle)
   1. Undergraduate
   2. Graduate

F. Education Status in your current degree program (please circle)
   1. First year
   2. Second year
   3. Third year
   4. Fourth year
   5. Fifth year +

For this section, please reflect upon a significant nonmarital relationship breakup you have experienced within the past 2 years.

G. To what degree did this breakup have an impact on you/your life? (please circle)

   1  2  3  4  5  6  7
   Very little  Minimal  Moderate  Significant

H. How would you describe the relationship? (please circle)

   1. Heterosexual
   2. Same-Sex

I. How long ago did this breakup occur? (please specify # of months, or weeks if applicable): ________________________________

J. What was the length of this relationship before the breakup? (please specify # of months, or weeks if applicable): _______________________

K. Who primarily initiated the breakup? (please circle only one option)

   1. You
   2. Partner
L. **How many dating partners/relationships have you had since this relationship termination?:**

M. **Approximately how long after the breakup did you begin dating a new partner?** (please specify # of months, or weeks if applicable). If you have not yet begun dating a new partner, please indicate so:

N. **Have you participated in formal counseling to address issues specifically related to this relationship breakup?**
   
   1. Yes
   2. No

O. **Please provide any additional comments you would like to share about this breakup:**
Appendix B

Recruitment Email
Hello my name is Kristin Gillen and I am a doctoral student in counseling psychology here at Western Michigan University. Dr. Kelly McDonnell and I are conducting a research project for my dissertation investigating the impact of nonmarital romantic relationship breakups in college students. This study involves completing several brief questionnaires including anonymous demographic information, emotional reactions to breakups, positive experiences post-breakup, and questions about how you respond to life circumstances in general. Students who identify as having experienced a significant nonmarital romantic relationship breakup within the past 2 years and who are age 18 or older are invited to participate in this research project. We anticipate minimal risk to you as a result of your participation, other than the loss of time required to complete the survey and possible minimal stress you may experience in recounting a particular relationship breakup. While there may be no immediate benefit to you as a result of participation in this study, this might provide an opportunity for you to reflect upon/process a significant breakup. It is hoped that we may gain helpful information about both the emotional impact and personal growth that may occur after a relationship breakup that might assist college students, like yourself, experiencing a breakup.

These research questionnaires will take approximately 25 minutes to complete. Additionally, your responses will be completely anonymous. If you participate in this study, you have the opportunity to participate in a raffle for a $50 Target gift card.

If you would like to learn more about participation, please contact Kristin Gillen at: gillenkr@hotmail.com
Appendix C

Anonymous Informed Consent Form
You are invited to participate in a research project titled "Sense of Coherence: The Impact on Personal Growth and Distress after a Relationship Breakup" which is designed to explore college students' experiences following a nonmarital romantic relationship breakup as well as responses to life circumstances in general. Dr. Kelly McDonnell and Kristin Gillen are conducting this research as part of Kristin Gillen's dissertation.

The research questionnaires will take approximately 25 minutes to complete. Please complete all materials in one sitting. The questionnaires request that you respond to a variety of questions including: anonymous demographic information, emotional reactions to breakups, positive experiences post-breakup, and questions about how you respond to life circumstances in general. We anticipate minimal risk to you as a result of your participation, other than the loss of time required to complete the survey and possible minimal stress you may experience in recounting a particular relationship breakup. A list of counseling referral resources is provided, if you feel you would like to discuss your feelings about a particular breakup in greater depth. While there may be no immediate benefit to you as a result of participation in this study, this might provide an opportunity for you to reflect upon/process a significant breakup. It is hoped that we may gain helpful information about both the emotional impact and personal growth that may occur after a relationship breakup that might assist college students experiencing a breakup. Your responses will be anonymous; therefore, please do not place your name anywhere on the forms. You may choose not to answer any question and simply leave it blank. You may discontinue your participation at any time. If you choose to not participate in this survey, please mail the entire research packet back in the intercampus envelope provided. Returning a completed survey indicates your consent for use of the answers you supply. You may return the completed surveys by mailing them in the intercampus envelope provided (see enclosed intercampus mail drop-off information). All data will be stored in the student investigator's locked office and, when data is entered into a computer system, it will be password protected. Data will be retained for a period of at least seven years in compliance with state and federal regulations and APA ethical standards.

If you participate, you also have an opportunity to participate in a raffle for a $50 Target gift card. If you are interested in being included in this raffle, please complete the prepaid postcard enclosed in this packet. Your name will not be linked to your completed packet. The winner will be notified by email when survey collection is complete.

If you have any questions, you may contact Dr. Kelly McDonnell at 269.387.5107 or Kristin Gillen at 269.806.6909. You may also contact the Chair of the Human Subjects Institutional Review Board (269.387.8293) or the Vice President for Research (269.387.8298) if questions or problems arise during the course of the study. This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year. Please keep this copy of this Anonymous Consent Form.
Appendix D

In-person Recruitment Script
Hello my name is Kristin Gillen and I am a doctoral student in counseling psychology here at Western Michigan University. Dr. Kelly McDonnell and I are conducting a research project for my dissertation investigating the impact of nonmarital romantic relationship breakups in college students. This study involves completing several brief questionnaires including anonymous demographic information, emotional reactions to breakups, positive experiences post-breakup, and questions about how you respond to life circumstances in general. Students who identify as having experienced a significant nonmarital romantic relationship breakup within the past 2 years and who are age 18 or older are invited to participate in this research project. We anticipate minimal risk to you as a result of your participation, other than the loss of time required to complete the survey and possible minimal stress you may experience in recounting a particular relationship breakup. While there may be no immediate benefit to you as a result of participation in this study, this might provide an opportunity for you to reflect upon/process a significant breakup. It is hoped that we may gain helpful information about both the emotional impact and personal growth that may occur after a relationship breakup that might assist college students, like yourselves, experiencing a breakup.

These research questionnaires will take approximately 25 minutes to complete. Your responses will be completely anonymous, so please refrain from placing your name anywhere on the forms. If you participate in this study, you have the opportunity to participate in a raffle for a $50 Target gift card. If you would like to have your name entered into the raffle please complete and mail the prepaid postcard enclosed in the packet. Your name will not be tied to your completed packet. The winner will be notified by email when survey collection is complete. If you choose to participate you can return this survey by placing it in the enclosed envelope. Returning a completed survey indicates your consent for use of the answers you supply. If you choose not to participate, please return the entire packet of research materials in the intercampus envelope provided.

Do you have any questions? Thank you.
Appendix E

HSIRB Approval Form
Date: August 14, 2008

To: Kelly McDonnell, Principal Investigator
    Kristin Gillen, Student Investigator for dissertation

From: Amy Naugle, Ph D., Chair

Re: HUIRBB Project Number: 08-08-11

This letter will serve as confirmation that your research project entitled "Sense of Coherence. The Impact on Personal Growth and Distress after a Relationship Breakup" has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRBB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: August 14, 2009