The termination of a romantic relationship, be it by breakup or divorce, is a fairly ubiquitous experience. Most individuals will recover from a traumatic experience of this nature; some however, experience substantial difficulties in recuperating that persist over time. For these individuals, relationship termination can invoke a variety of negative physical and psychological health outcomes. This project examines the role of social cognitive maturity, operationalized as Interpersonal Decentering, in recovery following a relational loss. Participants in this study were assigned to a pre/post control or measurement intensive (four visits) condition over the course of nine weeks. Individuals in the latter condition completed a Stream of Consciousness (SOC) task in which they discussed their breakup experience out loud for four minutes. These narratives were then transcribed and scored using the Interpersonal Decentering manual as adapted for Expressive Writing. Results indicate that – for women only – mature social cognition is inversely related to depressive mood at the initial visit. However, it is not related to initial PSTD symptomatology for men or women, nor does it predict decreases in depression and trauma symptomatology from the initial visit to the nine-week follow-up. Implications, limitations, and future directions for research of this nature are discussed.
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Molly S. Tucker
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CHAPTER 1

INTRODUCTION

The termination of a romantic relationship is an anxiety-inducing experience that can result in a variety of negative mental and physical health consequences (Asarnow et al., 2008; Davis et al., 2003; Gottman, 1994; Kriegbaum, Christensen, Andersen, Oslen, Lund, 2013; Monroe et al., 1999; Sbarra & Emery, 2005; Sbarra et al., 2009). There are many factors that influence distress and recovery alike; however, there is a dearth of research examining the specific mechanisms that contribute to recovery from a relational loss. For instance, many individuals feel a strong compulsion to express themselves following a trauma, and Expressive Writing is one proposed paradigm that may facilitate adaptive coping. Use of this paradigm (and others that emphasize the use of narratives) following a breakup has received some attention, but examination of narrative content is still rare. What is it about oral or written expression in the wake of a relational loss that facilitates or hinders recovery?

Existing literature on recovery from relationship dissolution has not addressed mature social cognition as a possible protective factor, or as a mechanism to facilitate recovery. Constructs such as role-taking, perspective-taking, mentalizing, and Decentering (processes of considering the thoughts and feelings of others in relation to one’s own) are important facets of social cognition that may influence the direction and intensity of the recovery process. The present study endeavors to address the gap in existing literature by exploring the relationship between decentering processes and distress following a relational loss.

Romantic Breakups and Resulting Distress

Romantic relationships are a critical component of most adults’ lives (Berscheid & Reis, 1998). Quality romantic relationships can provide some of the richest emotional experiences,
and may yield a protective effect against daily life stressors. Individuals who are in love exhibit
greater diversity of self-concept domains, increased self-esteem and feelings of self-efficacy, and
fewer mental and physical health problems (Aron et al., 1995; Braithwaite et al., 2010). At least
in the short term, falling in love has the capacity to increase feelings of self worth and increase
belief in one’s own capacity to accomplish goals.

Theories of relationship development posit an increase in the intensity of romantic
relationships with age, experience, and duration. Adolescent romantic relationships influence
relationship outcomes in young adulthood, and thereby are an integral component of adult
maturation (Meier & Allen, 2009). It may follow that the quality and intensity of romantic
relationships sustained during young adulthood predict the formation of mature marital
relationships for adults.

Conversely, dissolution of a romantic relationship is considered to be among the most
stressful life experiences (Maciejewski et al., 2001). The end of a romantic relationship, be it a
breakup or a divorce, can be a high stress experience that leads some people toward poor
psychological and physical health outcomes including anxiety, loneliness, emotional volatility,
first onset Major Depressive Disorder, psychopathology, immune suppression, higher blood
pressure reactivity, susceptibility to myocardial infarction, fatal and non-fatal illness or
accidents, and decreased longevity due to death by suicide or homicide (Asarnow et al., 2008;
Davis et al., 2003; Gottman, 1994; Kriegbaum, Christensen, Andersen, Oslen, Lund, 2013;
Monroe et al., 1999; Sbarra & Emery, 2005; Sbarra et al., 2009). Additionally, individuals
experiencing a breakup in the past year score, on average, in the severe range of post-traumatic
stress symptoms (Chung et al., 2003). The longer people focus on their regrets and longings, the
worse their corresponding outcomes. This finding suggests possible mechanisms linking
relationship dissolution and poor health.

Factors Influencing Distress

It is well known that social species struggle when they find themselves on the outskirts of the community, and that perceived isolation is a risk factor for a variety of negative outcomes, including poor cognitive performance and executive functioning, accelerated cognitive decline, increased negativity and depressive symptomology, and heightened sensitivity to social threats, all of which can perpetuate isolation (Cacioppo & Hawkley, 2009). Romantic relationships are fundamentally social in nature; the dynamic between the two partners resides in a broader social context of friends and family. In fact, greater reports of social support correlate with lower feelings of distress following relationship dissolution (Frazier & Cook, 1993).

Furthermore, romantic relationships are critical in the conceptualization of oneself in a social context. As our social environments fluctuate, so too can our sense of self. Self concept can be defined as a person’s perception of their own physical appearance, attitudes, beliefs, and attributes, as well as where they fit into their own social experience. Self-concept clarity is defined as the extent to which a person’s self-concept is clearly defined, internally consistent and stable over time. (Campbell et al., 1996). It is not unusual for individuals to struggle with changes in the content of their self-concept, as well as feelings of loss of self, following a breakup (Slotter, Gardner, Finkel, 2010).

Greater distress in a breakup’s aftermath has been related to relationship duration (Simpson, 1987); relationship closeness and satisfaction, perceived competence in finding another partner, feelings of control over the breakup, desire to terminate the relationship (Frazier & Cook, 1993); and who initiated the dissolution (Thompson & Spanier, 1983). Initial distress and later recovery appear uncorrelated (Frazier & Cook, 1993).
According to John Bowlby’s (1969) original attachment theory, there are three main attachment styles that manifest differently in adult relationships: (1) Secure: characterized by trusting, long-term relationships, (2) Ambivalent: characterized by reluctance to become close, and reciprocity fears, and (3) Avoidant: characterized by difficulties in establishing intimacy. Individual differences in attachment styles certainly influence the recovery process from a breakup over time.

For instance, insecure attachment styles, such as fearful and dismissive, are associated with distress at the time of a breakup, as well as feelings of ongoing distress (Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998). Attachment related anxiety is associated with greater longing for the ex-partner, excessive rumination, incensed and resentful behavior, and other negative coping strategies, including an increased propensity for substance abuse (Davis, Shaver, & Vernon, 2003). People reporting secure attachment styles tend to breakup less frequently, as well as cope more effectively than their insecure counterparts (Frazier & Cook, 1993; Kirkpatrick & Hazan, 1994).

Perseverative cognitions, such as worry and rumination, are common stress responses that prolong stress-related affective and physiological activation of a wide range of physical systems. This prolonged activation may in turn increase somatic symptomology (Brosschot et al., 2006). People engage in rumination in an attempt to alleviate emotional stress and to achieve greater situational clarity. However, research suggests that introspection may be maladaptive in that excessive rumination about one’s emotional circumstances may lead individuals to feel worse. How then, can individuals process negative experiences without increasing negative affect, depressive symptomology, and cardiovascular reactivity?

Factors Influencing Recovery
Because breakups are so prevalent, it is critical to understand the mechanisms that promote wellbeing and resilience, even maturation, in the face of this common life stressor. Social connectedness, for instance, is a critical component of good health (Cohen, 2004) and predicts decreased systolic and diastolic blood pressure reactivity (Ong & Allaire, 2005) as well as decreased perceived pain sensitivity (Mitchinson, Kim, Geisser, Rosenberg, & Hinshaw, 2008) for patients recovering from physical ailments.

Higher incidence of social support is also related to increases in recovery from serious mental illness (Corrigan & Phelan, 2004), and predicts increases in self-esteem and decreased depression levels (Lee & Robbins, 1998; Williams & Galliher, 2006). For individuals who have recently experienced a relational loss, social support is related to initial distress, but even more strongly related to recovery (Frazier & Cook, 1993). Furthermore, the presence of social support following a traumatic life event may interrupt the progression of distress into disorder (Paykel, 2007).

On an individual level, reflecting upon oneself may foster self-insight (Hixon & Swann, 1993). However, self-immersion (akin to rumination, or brooding) is an introspective strategy from an egocentric perspective that may be maladaptive for some individuals (Ayduk & Kross, 2010). In contrast, one can work through negative experiences from a self-distanced, or ego-decentered perspective. Psychological distancing is a component of adaptive self-reflection that utilizes directed consideration of negative events from a third person, or decentered, perspective. This perspective re-constructs the focal event from an observer’s vantage point, and often leads to lower depressed affect than does self-immersion (Kross & Ayduk, 2008). It is understandable then, that the ability to distance oneself from destructive thoughts and behaviors has also been shown to yield long-term positive effects in the recovery from major depression (Fresco et al.,
Extant literature suggests that self-distancing facilitates adaptive self-reflection (Kross & Ayduk, 2011), and can even be accomplished “in the heat of the moment,” so to speak (Mischkowski, Kross, & Bushman, 2012). Those who spontaneously self-distance while reflecting on negative memories experience less emotional and cardiovascular reactivity, less intrusive ideation, increased problem solving behavior, and less negative reciprocity than do those who self-immers when dealing with interpersonal conflicts (Kross, Duckworth, Ayduk, Tsukayama, & Mischel, 2011). Perhaps psychological distance from the self focuses people’s efforts to understand their feelings into more adaptive than maladaptive self-reflection (Ayduk & Kross, 2010).

Whereas rumination and remorse are forms of negative repetitive thought patterns following relationship dissolution that predict negative adjustment, self-reflection is a predictor of positive adjustment (Saffrey & Ehrenberg, 2007). Self-rumination (or immersion) is negatively correlated with perspective taking and positively correlated with personal distress, whereas self-reflection (or self-distancing) is positively correlated with perspective taking and empathic concern (Joireman et al., 2002). Increased perspective taking skills following a relationship transition may help to foster decreased feelings of distress, increased awareness of both partners’ roles in the breakup, and subsequent feelings of insight and acceptance.

Experimental Disclosure for Recovery

Many individuals feel a strong compulsion to express cognitions and emotions during and in the wake of upsetting experiences (Rimè, 1995). Indeed, the communication of these feelings is often a central tenant in psychotherapeutic interventions (Stiles, 1995). In a recent meta-analysis, experimental disclosure was found to generate significant and positive effects for those
who participate, regardless of mode of exposure (Frattaroli, 2006). The Expressive Writing (EW) paradigm, as put forth by Pennebaker (1997), is considered a useful tool in the processing of traumatic life events, including relationship dissolution. Furthermore, EW has been found to facilitate a variety of mental and emotional improvements in subjects of vastly different ages and experiences, and in both clinical and non-clinical populations (Baikie & Wilhelm, 2005; Frisina, Borod, & Lepore, 2004). Although many individuals report the writing experience as emotionally upsetting (short term effects of participation may include increased distress, negative affect, and physical symptoms), they also acknowledge the usefulness of the exercise in the digestion of traumatic life events and long-term recovery (Baikie & Wilhelm, 2005).

In its original incarnation (Pennebaker, 1997), the paradigm involves random assignment of subjects to either the EW or control writing groups. Both groups are assigned 15-30 minutes of uninterrupted writing time each day for 3-5 consecutive days, generally in a controlled laboratory setting. Those assigned to the control group are instructed to write about ordinary matters, such as how they have spent their time that day. Those assigned to the EW group are given an approximation of the following prompt: “For the next three days, I would like you to write about your very deepest thoughts and feelings about an extremely important emotional issue that has affected you and your life. In your writing, I’d like you to really let go and explore your very deepest thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives to your past, your present, or your future or to who you have been, who you would like to be, or who you are now. You may write about the same general issues or experiences on all days of writing or on different topics each day. All of your writing will be completely confidential. Don’t worry about spelling, sentence structure, or grammar.
The only rule is that once you begin writing, continue to do so until your time is up.” There have since been several variations of these instructions, though fundamentally similar in content.

Meta-analyses conducted by Frisina, Borod, & Lepore (2004) indicated that expressive writing induces greater physical (than psychological) health outcomes, and reduces health care utilization (HCU) in healthy subjects (Harris, 2006). In the long term, participation in such writing exercises has been shown to decrease physician visits and days spent hospitalized, improve functioning of the lung, liver, immune and hormonal systems, and of biological markers of stress or disease, and impart changes in autonomic and muscular activity (Baikie & Wilhelm, 2005; Booth, Petrie, & Pennebaker, 1997; Pennebaker & Beall, 1986; Pennebaker & Francis, 1996; Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Petrie, Booth, Pennebaker, Davison, & Thomas, 1995).

Additionally, improvements in temperament and other measures of psychological well-being have been reported (Murray & Segal, 1994). Participation in EW exercises predicts lower levels of brooding, anxiety, and depressive symptomatology at follow-up, and moderates the relationship between intrusive thoughts and depressive symptomatology (Baikie & Wilhelm, 2005; Gortner, Rude, & Pennebaker, 2006; Graf, 2004; Lepore, 1997).

Behavioral changes such as improvements in grades, working memory, and sporting performance, reductions in employee and student absenteeism, and re-employment following job loss have also been witnessed in writing groups relative to control groups (Baikie & Wilhelm, 2005; Francis & Pennebaker, 1992; Klein & Boals, 2001; Lumley & Provenzano, 2003; Pennebaker & Beale, 1986; Spera, Buhrfeind, & Pennebaker, 1994).

Furthermore, it has been posited that EW may combat the adverse affects of deeply-rooted gender schema, social roles, and socialization issues that adversely affect some
individuals’ ability to recover from trauma and/or activate adaptive schema, roles, and socialization tendencies that facilitate coping (Range & Jenkins, 2010). This is a particularly promising claim for individuals whose stunted social-cognitive maturity or maladaptive pre-determined notions of masculinity and femininity may be tarnishing their existing relationships, impeding their ability to establish strong and meaningful connections, and slowing recovery from traumatic relational losses. However, there has been limited attention devoted to the content of EW essays, including perspective-taking, meaning-making, changes in affect and attitude, and process.

Some attention has been paid to mode of experimental disclosure: handwriting, typing, or oral narratives. Brewin & Leonard (1999) suggested that handwriting experimental disclosure narratives might yield better results than typing, as typing requires effortful use of cognitive resources that may distract the participant from the task at hand. In this same vein, Frattaroli suggests in her meta-analysis (2006) that verbal disclosure may actually be preferable to and more useful than written disclosure because speaking is even more effortless, allowing full attention to be devoted to the task at hand. What’s more, verbal narratives allow for an added emotional component in vocal inflection, which is another aspect of immersion in the task that writing cannot engender (Murray & Segal, 1994). There has been a relative dearth of literature examining other modes of experimental disclosure, despite results indicating that both verbal and written disclosure are equally efficacious (Frattaroli, 2006). The present study addresses this gap by examining oral narratives disclosed in a private setting (to a tape recorder).

Enright and Lapsley’s Review of Social Role-Taking Constructs

Enright and Lapsley (1980) endeavored to examine social role-taking constructs (primarily in child populations), measures for tapping these constructs, and the validity and
reliability of each in their exhaustive review. Generally speaking, role-taking constructs have been organized into cognitive and social domains; both involve the ability of a person to consider the perspective of another, separate individual. There have been several tasks designed to assess cognitive and emotional role-taking independently. Feffer and Gourevitch (1960) were the first to establish a task that tapped role-taking as a whole: the Role-Taking Task (RTT).

Cognitive role taking refers to an individual’s capacity to think about what another person may be thinking. In the first stage, there is no consideration that other individuals may think differently than oneself. The next stage is characterized by the realization that others may possess different modes of thinking than oneself, although this understanding may be underdeveloped. The third stage is marked by a subject’s ability to assume the mindset of different individuals sequentially, as well as reflect on the self from these different perspectives. The ability to comprehend multiple cognitive perspectives simultaneously marks the final stage of cognitive role-taking ability (Flavell et al., 1968; Selman & Byrne, 1974).

Three interconnected theoretical constructs were designed to explain, on a developmental level, the reasoning behind cognitive role taking: egocentrism, operative functioning, and role-taking structure. Piaget (1926) suggested the existence of an egocentrism that marks a child’s inability to acknowledge the existence of other-directed perspectives beyond their own self-referenced perspective. Youniss (1975) expanded upon the concept of egocentrism by suggesting that cognitive schemas play a critical role in the ability to know another person. This “operative knowing” occurs as a result of an individual’s own cognitions as well as characteristics of the other person. Selman (1971) sought to define the mental actions employed at each level of operative knowing by establishing a role-taking structure (i.e. egocentrism versus
perspective-taking versus perspective-taking with the understanding that the process is bi-directional).

There are several common assumptions that underlie the cognitive role-taking philosophy. These are: (1) the necessity of the Piagetian levels; (2) internal consistency in an individual’s capacity for role-taking across tasks; (3) the hierarchical; (4) invariable; and (5) universal nature of each level; (6) the relationship between each level and general social competence; and (7) the measurement of abilities beyond verbal and logical domains (Enright & Lapsley, 1980).

Emotional role taking, on the other hand, refers to an individual’s capacity to consider the emotional and affective states of another person. This is quite different from (but often confused with) empathy, which is characterized by the sharing of affective states with others. The developmental sequence of affective role-taking is comprised of the following stages: (1) an understanding that emotional states originate within individuals (Hoffman, 1976), (2) an ability to accurately anticipate the emotional reaction of others (Borke, 1971), (3) confusion of one’s own emotional viewpoint with those of others (Chandler & Greenspan, 1972), and (4) coordination of multiple emotional perspectives in relationship to one’s own (Chandler & Greenspan, 1972).

It is unfortunate that many measures of cognitive and emotional social maturity have been loose in the assessment of reliability, that is, the consistency of the measure across items as well as over time (Enright and Lapsley, 1980). Of those that do furnish this information, it revolves largely around inter-rater reliability (the consistency of scores between scorers), rather than internal consistency (the consistency of the scores across items). The former, on its own, is not sufficient to establish a measure as consistent.
Validity is assessed in order to establish whether a measure is in fact accurately estimating what it claims to be estimating. For cognitive role-taking measures, Enright and Lapsley (1980) posited eleven criteria that would need to be met in order to establish validity: (1) a relationship with age, (2) if seen as different concepts, there must be stringent criteria to demonstrate the distinctions between egocentrism and operant knowing, (3) the necessity (but insufficiency) of Piagetian levels in the assessment of role-taking, (4) internal consistency, (5) temporal stability, (6) empirical support for the hierarchical nature of each stage, (7) universality of stages across cultures, (8, 9) correlations within cognitive and affective role-taking scales, respectively, as well as between cognitive role-taking scales and affective ones, (10) differences in levels relative to differing levels of social adjustment, and (11) a higher correlation within domains than between the scale and measures of general intelligence.

All cognitive measures reviewed by Enright and Lapsley (1980) were found to meet the first and eighth criteria (levels are related to age and tap comparable domains). However, no measure met all eleven criteria. The only criterion that all of the affective scales successfully met is the first: the scales may all be considered developmental. The combined cognitive and social measures as outlined by Feffer and Gourevitch (1960) are also not without flaws, and only wholly satisfied criterion one, and partially satisfied criteria five, eight, and eleven. Despite its popularity in social education programs, the Feffer measure was not recommended for use due to lack of definition of the construct, low internal consistency, and clear support for only one validation criterion, according to Enright and Lapsley (1980). It seemed then that cognitive role taking programs were the most defined, but still left much to be desired.

The cognitive measures reviewed by Enright and Lapsley (1980) fall largely within a Piagetian framework and employ story-telling or open-ended response as the primary form of
measurement. Flavell et al.’s apple-dog task (1968) relies on the child’s ability to decenter from his or her own perspective in the prediction of a new story conception and Chandler’s privileged information task (1973) assesses a child’s relative egocentrism or decentering capacity based on an understanding that the possession of differential information leads to different perspectives. These measures demonstrate a transcendence of childish egocentrism.

Flavell et al.’s nickel and dime game (1968) assesses a child’s reasoning about an opponent’s views as well as recursive thinking, Selman and Byrne’s sociomoral interviews (1974) assess operative thinking/structuralism through a child’s ability to consider multiple perspectives, and Miller, Kessel, and Flavell’s recursive thinking task (1970) assesses a child’s ability to reason about another’s thoughts within several increasingly recursive categories. These measures not only encompass a progression past egocentrism, but also identify the attainment of more abstract perspective taking skills.

Based on this analysis, Enright and Lapsley (1980) issued several conclusions and corresponding recommendations for future research endeavors in the examination of social role taking. The first conclusion is that social role taking was conceptualized in many different ways at the time of the article; there appeared to be distinct variations within cognitive domains, as well as confusion between empathy and role taking in the definition of affective role taking. The authors suggested clearer and more concise definition of role-taking constructs and the associated assumptions.

Because the selection of role-taking tasks in the past did not adequately consider psychometric properties, the authors suggested a more classical approach to the selection of sound, empirically supported scales. They went on to propose the creation of new role-taking measures with an emphasis on careful test construction. This way, the resulting scales could be
more adequately assessed for reliability and validity prior to implementation in research paradigms.

Due to the unstable nature of the reliabilities that were available for many scales, there was some question about the possibility of practice effects and/or item variability within measures (differing levels of familiarity or complexity). Additionally, the finding that older responders offered more consistent results than younger responders suggests that performance on role-taking tasks may be a developmental phenomenon, and is consistent with existing theories of mind. This may have been another contributing factor to weak internal consistency. Separate analyses of younger children versus older children may yield findings that strengthen internal consistency and further clarify the developmental nature of role taking.

Lastly, Enright and Lapsley (1980) suggested that social role taking might be too complex a construct to be measured by narrow validation techniques, and that future research should be directed toward understanding the necessary conditions for growth as a social role-taker, the hierarchical nature of the stages, analysis of the generalizability of role-taking measures across cultures, the relationship between social role-taking and behavioral competence, and more stringent validation studies for each measure.

In sum, the authors challenged future researchers to more clearly define – and validate – the construct of role taking, without sacrificing the theory-driven logic. Conversely, they remained open to the possibility that psychometric properties may not be well suited for the establishment of role-taking measures as actually testable. In either case, future research called for deeper investigation into these domains.

Lewis and Carpendale (2011) on Social Cognition
Theory of mind, broadly defined, is the understanding that others have internal mental and emotional states, and that these states may differ from one’s own. An early period of intense research interest (primarily among developmentalists) on these constructs in the 1960s - 1970s stalled in part due to the inconsistent findings among studies using differing construct conceptualizations and measurement methods (reviewed in Enright & Lapsley, 1980). Even so, the definition of theory of mind remains a burning question in research literature as a result of prevailing interest in what separates human social understanding from that of lower primates (Premack & Woodruff, 1978), the role of false beliefs in the development of social maturity (Wimmer & Perner, 1983), and the nature of autistic relative to normal development (Rutter, 1983). Lewis and Carpendale (2011) critically reviewed the literature in regards to the way individuals consider themselves and others in a social context. In particular, the authors sought to review the trajectory of research on social cognition as it pertains to development in children. The chapter is broken down into four key components: (1) perspectives in the theory-of-mind literature, (2) social understanding and the role that social processes play in its development, (3) the role of language, and (4) “social and relational aspects” of adolescent comportment.

The term, “theory of mind,” implies that children and adults alike subscribe to similar social cognitive principles, and that these principles are subject to change over time, as is any “theory.” Wellman (1990) elaborated upon the “theory-theory” in suggesting that these internal structures must be coherent, distinguish between mental and physical processes, and adhere to a cause-effect framework. In this school of thought, children first exhibit desires, then beliefs, and then multifaceted affective states. In a similar vein, Perner (1991) suggested that the mind more closely mirrored a system of representations. That is, children begin with a “mentalistic theory
of behavior” (a notion of the world as it is) and progress to a “representational theory of mind” (mental states are distinguished from the physical world, and can thus be false representations).

In contrast, Leslie (1994) suggested an “Innate Module account” that posited that children do not construct these mental representations. Rather, our information “Selection Processor” gradually develops and eventually allows the application of our existing “Theory of Mind Mechanism” (ToMM) to social situations as we grow up. Johnson (1988) and Harris (2000) went on to suggest that the capacity for imaginative flexibility is what facilitates the understanding of mental states. The simplicity of this approach (known now as simulation theory) has facilitated its persistence in the study of mental states.

As recounted by Lewis and Carpendale (2011), these theories were hotly debated in the 1990s, and ultimately resulted in something of an agreement that both theory-like understanding and imaginative flexibility (and the factors that both encompass) may be involved in social cognition. However, reconciliation between the more theory-oriented perspective and the innate module account has been more difficult; the two cannot reach agreement about whether or not “theory-like” shifts occur during childhood. If they do occur in childhood, then differences in social cognition during adolescence and adulthood may be attributable to other factors. If these shifts do not necessarily occur in childhood, there may be important social implications for adolescents and adults that are underdeveloped in this regard.

Each model has witnessed changes and progress in recent years (Lewis & Carpendale, 2011). However, the theory-theory posited by Wellman (1990) has seen little change. Although the notion of a systematic progression from desire to complex emotional states has been demonstrated cross-culturally (Wellman, Fang, Liu, Zhu, & Liu, 2006), there is still some question as to whether the nature of the tests call forth certain social-cognitive processes rather
than tap into a natural “unfolding of theory of mind.” Representational theory suggests that executive skills precede social understanding, but these findings have not been replicated in all cross-cultural studies (Oh & Lewis, 2008). As such, it has been suggested that the two are intertwined, rather than chronologically related.

New studies of the innate module account have been interpreted as indicative that toddlers possess a representational theory of mind (Onishi & Baillargeon, 2005). Other theorists posit that these new findings suggest that simple associations, rather than theory, are at play in toddlers (Perner & Ruffman, 2005). Simulation theory has garnered renewed interest as a result of studies indicating that neurons in both primates and humans fire in response to certain gestures or actions (Gallese, Fadiga, Fogassi, & Rizzolatti, 1996; Iacoboni et al., 2005). The attempt to relate mirror-neuron response to different levels of experience is tempered by the proposition that there is a stark difference between neurology and psychology (or more simply put, information and meaning-making) (Carpendale & Lewis, 2006).

Social Cognitive Development in Children

As outlined by Lewis and Carpendale (2011), several factors are linked to mature social understanding in children and adolescents. These include social network, number of siblings, and nature of those relationships (Cutting & Dunn, 1999; Lewis, Freeman, Kyriakidou, Maridaki-Kassotaki, & Berridge, 1996); birth order; parent-child language; secure, anxious, or avoidant attachment style (Fonagy, Redfern, & Charman, 1997); maternal mind mindedness, or a mother’s understanding of her child’s psychology (Meins et al., 2002); authoritative, authoritarian, or permissive parenting style (Baumrind, 1991; Hughes, Deater-Deckard, & Cutting, 1999); parenting skills and social competence (Sabbagh & Seamans, 2008); family socioeconomic status (SES); and sensory loss. These factors suggest a need to emphasize both
social and cognitive components in the study of the development of social understanding in children.

Links between children’s social experience and their social cognitive development often emphasize the importance of language development. This factor is highlighted in studies of deaf children and the need for complex discussion (de Villiers & de Villiers, 2000), siblings and linguistic ability (Jenkins & Astington, 1996), maternal use of psychological and mental-state terms and corresponding discussions and reflection (Moore, Furrow, Chiasson, & Patriquin 1994), parental conversations with children about social altercations and disciplinary action (Ruffman, Perner, & Parkin, 1999), and social connectedness as demonstrated through language (Dunn & Brophy, 2005). The language that children employ can be effectively seen as a window into their social cognitive development. The relationship between language and social understanding may be directional, bi-directional, or influenced by a third factor. The complexity of each component has been a stalling point for theorists and researchers, and still requires considerable attention (Lewis & Carpendale, 2011).

The Cartesian view that internal mental states are the source of external behaviors implies that children reflect upon their own innermost states, but must extrapolate about those of others (Russell, 1996). Others contend that internal states such as views and intentions can be discussed in terms of behavior, rather than as a source of behavior (Carpendale & Lewis, 2004). Others still emphasize the importance of a relational framework in the understanding of social cognition (Hutto, 2008). While initial research of this subject focused on the point at which children understand the existence of and plausibility of false beliefs, subsequent research has shifted gears to the relationship between social understanding and other aspects of an
individual’s social experience. Future endeavors should include human aspects such as conduct and morality, among other skills (Lewis & Carpendale, 2011).

The Many Theories of Mind

“Theory of Mind” constructs designed to explain children’s understanding of the social and psychological world (role taking, perspective taking, and decentering) are often used interchangeably in the assessment of interpersonal domains of functioning. In Lewis and Carpendale’s review (2011), the social cognitive constructs are similar in the proposition that interpersonal interactions are more successful when an individual acknowledges that others’ perspectives may differ from their own. This being the case, the consideration of other people’s wants, desires, and feelings prior to action is of paramount importance (Feffer & Suchotliff, 1966). This level of consideration develops during childhood and adolescence (Lewis & Carpendale, 2011). Whether an adult employs this skill in interpersonal decision-making may depend on personality factors.

However, role-taking, perspective-taking, mentalizing, and Decentering constructs are designed and utilized somewhat inconsistently. The ways in which they are assessed (varying forms of storytelling and open-ended response with equally variable scoring systems) also have subtle, but unique distinctions. These distinctions may arise as a product of the different professional lenses through which they are viewed, and are important in the consideration of study design and hypothesis testing.

Role taking has been defined as the ability to “interpret the covert psychological properties of other people, their abilities, knowledge, motives, attitudes, perceptions, and intentions relevant to concrete situations” (Flavell, 1968). However, more literally, “taking the role of the other” differs from perspective taking in the emphasis on assuming the characteristics
(rather than the mindset) of a person, as a child would assume the role of a mother, or a princess, or a fireman in play (Mead, 1934). For successful and convincing role-taking to transpire though, it necessarily entails the adoption of another individual’s mentality (Flavell, 1968). Role-taking ability is of paramount importance for positive social interfacing, and is considered a measure of social cognitive maturity (Keller, 1976; Sommers, 1984; Leeper et al., 2008).

Perspective taking, as originally defined by Piaget, involved grasping another individual’s literal visual experience. It was traditionally measured by way of negation via the Three Mountain Task in which a child’s awareness of another person’s physical viewpoint is assessed. The child’s ability to understand that others may see something that they themselves cannot see is considered a higher-order skill, but is more concrete than understanding another person’s more abstract thoughts, feelings, and motives.

At a more advanced level, perspective taking has been defined as the capacity to comprehend another person’s thoughts, to place oneself in another person’s perspective, and to comprehend the other’s emotions without vicariously experiencing them (Hogan, 1969). One does not have to literally understand how another person is feeling in a situation; it is enough to simply imagine how they must be feeling. There are two distinct forms of perspective taking – one in which a subject imagines how another person feels, the other in which the subject imagines how they would feel in another person’s situation. The former is evocative of empathy; the latter elicits feelings of both empathy and distress (Batson, Early, & Salvarani, 1997).

Successful social interactions are partially characterized by each participant’s capacity for perspective taking (Feffer & Suchotliff, 1966). Gehlbach (2004, 2012) argued that social perspective taking involves both the ability and the propensity to consider another’s view of and reactions to a situation. The tendency to take the perspective of others may differ across
situations in which there is greater or lesser incentive to do so. Studies that utilize explicit structured self-report scales and other nonspecific situational measures implicitly allow respondents to answer according to what first comes to mind and to aggregate that understanding as they see fit. As a result, participants may respond in ways that are perceived as socially desirable, thereby disguising their true predisposition to take the perspective of others.

Melvin Feffer’s conceptualization of the Role-Taking Task (RTT) was designed within Piaget’s framework of cognitive development in children, with the goal of assessing decentering activity. In Piaget’s proposed progression, children learn to subordinate (decenter from) immediate and literal environmental interpretations in favor of more abstract, internalized conceptualizations. The RTT is associated with the developmental indices of the Rorschach, and is thereby considered a valid measure of level of cognitive development (Feffer, 1959). Furthermore, older children generally exhibit higher levels of decentering capacity in role-taking tasks than do younger ones, both in the RTT and Piaget’s tasks. These findings lend to the construct validity of the RTT, and allow for its use as a reliable measure of social cognitive maturity (Feffer & Gourevitch, 1960).

Feffer and Suchotliff (1966) went on to expand the application of decentering processes from the impersonal (a person’s relationship to a thing) to the interpersonal (a person’s relationship to another person) realm. They found that a subject’s ability to decenter in an RTT task is related to that subject’s ability to partake in successful social interactions. Additionally, Feffer and Phillips (1953) demonstrated that individuals who enjoy more successful social interactions exhibit better coping skills under experimentally induced stressful situations than do socially stunted individuals. If there is a relationship between coping processes and social skills, and a separate relationship between decentering capacity and social skills, might be possible
that decentering capacity can predict coping processes (or vice versa) for individuals who have experienced a traumatic life event?

The RTT is a narrative picture-based storytelling task that was loosely based on Shneidman’s 1952 Make a Picture Story (MAPS) task. In this task, a subject is presented with several pictures of background scenes (i.e. a living room, a street corner, etc.) and several ambiguous characters (men, women, and children) and asked to create three “stories” with at least three characters in each. After doing so, the subject is prompted to retell the story from each character’s perspective with an emphasis on what each character is thinking and feeling (Shneidman, 1952).

In Feffer’s original Role-Taking Task (RTT), participants are required to view and tell a story about a card that portrays multiple ambiguous characters. Then, they are asked to re-tell the story from each character’s perspective. This process is repeated for several different cards, each portraying different characters in vague situations. Decentering scores are assigned based on the participant’s tendency to individualize each story character’s experience while also integrating all characters into the same story premise (Feffer, 1959). Even children on lower ends of the autism spectrum are able to infer emotional information about others when prompted to do so (Serra, Minderaa, Van Geert, & Jackson, 1999). However, the purpose of such an assessment is to discern whether an individual can make these inferences without prompting. The nature of this perspective-taking task is an implicit one – participants are not aware of the expected responses, and thus may not be able to tailor their own accordingly.

For group administrations, the RTT can be administered by projecting a series of pictures (similar to TAT cards) on a screen. Participants are then asked to write as dramatic a story as possible, including a clear beginning, middle, and end, as well as what each of the characters is
thinking and feeling. However, unlike the administration of the TAT, subjects are then presented with the same pictures again, but this time asked to imagine that they are a character within the picture. Participants are instructed to tell the story again, but this time from the perspective of that character. This process is repeated for each character (up to three minutes per character) for each picture (Feffer & Suchotliff, 1966).

Decentering ability in an RTT is classified in three ways: simple refocusing, consistent elaboration, and change of perspective. Simple refocusing represents the lowest level of decentering, in which a character is inconsistently described from different viewpoints. Consistent elaboration, as the name would suggest, involves similar conceptualizations of a character from one perspective to the next. Change of perspective is the highest level of decentering, encompassing appropriate change, continuity, and sophistication. Decentering scores are assigned based on the participant’s ability to individualize each character’s experience while also integrating all characters into the same story premise (Feffer & Suchotliff, 1966).

Although both the TAT and RTT call for a description of what pictured characters are thinking and feeling, the RTT introduced an emphasis on perspective taking (in the required additional iterations of the initial story) that was absent in the administration of the TAT.

However, there was some question about which component of the RTT was actually determining role-taking ability: the coordination of perspectives demonstrated in the initial story or the consistency demonstrated in all parallel versions of the initial story. The concern was that if a participant offered a deficient initial story, the subsequent stories might also be deficient due to the lack of initial content, rather than lack of role-taking ability. To address this issue, Feffer and Jahelka (1968) expanded upon the RTT paradigm in the examination of subjects’ initial and subsequent stories for a single TAT card. They found that the level of integration of each
character’s viewpoints within the initial TAT story was in fact related to the level of reciprocal social interaction demonstrated.

Furthermore, the relationship between integration in the first story and level of reciprocal social interaction is a product of decentering processes, rather than the influence of the initial story on the subject’s demonstration of role taking in subsequent stories (Feffer & Jahelka, 1968). The RTT measures decentering relative to the level of coordination found in different, but parallel versions of the subject’s initial story. Decentering content analysis of the TAT measures decentering capacity based on the way relationships and perspectives are presented in the subject’s initial story. The most recent version of the Interpersonal Decentering paradigm combines the emphasis on perspective taking evident in the RTT with the initial-story methodology and cards derived from the administration of the TAT (Feffer et al., 2008).

Feffer’s Interpersonal Decentering (Feffer, Leeper, Dobbs, Jenkins, & Perez, 2008; Leeper, Dobbs, & Jenkins, 2008) is an implicit content analysis scoring system for thematic apperceptive stories (TATs) that assesses a subject’s tendency to take the perspective of others, anticipate or reflect on interactions, and consider the other’s response to one’s own actions. The origin of decentering in Piaget’s conservation theory (1972) (preoperational stage) appears in its developmental progression from sequential processing of interactions in stories (simple actions and reactions between characters, concrete operations) to simultaneous processing (internalizing others and multidimensional relational thinking, abstract formal operations). The process of surpassing the egocentrism that marks childish conceptualizations of the world, and to consider the inner workings of another individual’s mind, is the cornerstone of more advanced decentering.

Scores from Feffer’s Interpersonal Decentering scoring system have differentiated
adolescents diagnosed with schizophrenia from those not so diagnosed (Strober, 1979), predicted therapy clients’ retention versus attrition from therapy and their reports of more insight-oriented therapy processes relative to cognitive behavioral interventions (Jenkins, Nowlin, & Wilson, under review), and distinguished violence perpetrators from domestic violence survivors and other clinic clients with nonproblematic relationships (Jenkins, Dobbs, & Leeper, in press).

When scored from expressive writing essays about troubling relational events, higher Interpersonal Decentering scores were associated with use of more cognitive words, especially insight words; more positive emotion words; and self-rated experiences of emotional intensity pertaining to the relationship among participants reporting low closure about the breakup, thereby suggesting a state of activated interpersonal information processing (Jenkins, Austin, & Boals, 2013). Increased positive and emotion words (in a repeated measures design), in turn, have been related to symptom improvement after Expressive Writing (Ramirez-Esparza & Pennebaker, 2006). These associations may support the contention that decentering is positively correlated with relational problem solving and may facilitate less stressful relationship transitions. If it is the case that decentering relates to emotional distress in a meaningful way, research suggests that decentering can be taught as a potential method of stress management (Feldman, Greeson, & Senville, 2010).

A primary difference in Feffer’s Interpersonal Decentering method of perspective taking from other social cognitive assessments is the lack of explicit prompting. Stories are elicited using standard TAT instructions, or reasonable approximations; that is, participants are simply asked to “tell a story,” with no mention of telling the story from each character’s perspective (Morgan & Murray, 1935). As such, any decentering processes that occur during the response phase can be attributed to spontaneous processes and the disposition of the storyteller.
Responses are also impervious to practice effects (in the absence of feedback) after multiple administrations. This paradigm was adapted into the current manual used to teach decentering scoring to new research assistants (Feffer, et al., 2008).

By examining the highest score that an individual receives in any given story, that person’s tendency to Decenter spontaneously at a specific level can be identified. For unimpaired adults, this should be at a level 9 – the highest level. By averaging the Decentering scores for each interaction unit within a story, a more general representation of how maturely an individual considered the perspective of others during that task can be identified. Finally, by averaging the averages of each story, across multiple stories for an individual, that person’s general tendency to Decenter at mature levels becomes apparent. Use of different pictures to represent different kinds of situations clarifies how an individual might Decenter more maturely in some situations (or with some people) than others. The cross-situational consistency (or lack thereof) in Decentering may be a personality variable. Whether an individual’s capacity or performance for spontaneous decentering should be evaluated depends on the research question, but each can be readily identified (Feffer et al., 2008).

Expressive Writing for Intervention, Assessment, and Research

Despite a statistically meek effect size (Cohen, 1992), Expressive Writing can be particularly useful as a low-cost, minimally invasive developmental intervention (Bornstein, 2010), particularly in the treatment of young adults who have recently experienced a breakup. The termination of a romantic relationship often involves coping with difficult feelings of rejection, lonesomeness, shame, and/or remorse (Kaczmarek, Backlund, & Biemer, 1990), and there is an increase in negative emotion words when discussing the breakup (relative to discussing the relationship pre-breakup) in EW tasks, particularly for those who are avoidant of
it (Boals & Klein, 2005). Even so, EW appears to mobilize relational information processing (such as Interpersonal Decentering; Jenkins, et al., 2013) for some. Those who participate in EW exercises following a traumatic relational loss do not seem to experience the same physical ailments (such as upper respiratory illness symptoms, tension, and exhaustion, all of which are related to avoidance and intrusive thoughts for the control group alone) as their control group counterparts. EW participants also appear to be more likely to reunite with their former partner (Lepore & Greenberg, 2002).

Baikie and Wilhelm (2005) suggest several mechanisms by which the EW paradigm may impart the aforementioned positive changes. These include liberation of emotional strife, the confrontation of previously inhibited emotions, organization of more adaptive cognitive schemas surrounding the traumatic event, and repeated exposure resulting in the ultimate extinction of negative emotions and cognitions surrounding the event. Reduction of frequency and impact of intrusive thoughts is also a common byproduct of EW. The construction of verbal or written narratives may be viewed as a cognitive-emotional integration process through which a person may articulate more abstract intellectual processes in a tangible way (Lepore, Ragan, & Jones, 2000).

The benefits of expressive writing seem to translate to tasks involving verbal narratives as well. Simply talking about a stressful experience predicts lower levels of intrusive thoughts and subsequently decreased levels of stress when re-exposed to the upsetting stimuli (Lepore, Ragan, & Jones, 2000), as well as improved life satisfaction and physical and mental health (Lyubomirsky, Sousa, & Dickerhoof, 2006). Because individuals in real world situations are considerably more likely to verbally discuss traumatic events rather than write about them, the support for both narrative types as potentially therapeutic has important implications.
Furthermore, the open-ended nature of narrative tasks allows for greater variability of response, whereas structured self-report can be restrictive and may not accurately reflect an individual’s true experience.

The Stream Of Consciousness (SOC) task administered in the present study required participants to speak out loud about their relationship breakup for four continuous minutes. These audio recordings were transcribed, checked, and rechecked by research assistants to ensure verbatim accuracy. The SOC transcriptions fulfill many of the requirements outlined by McClelland (1980) to increase validity of open-ended assessment: they are geared to assess how an individual decenters under neutral/normal conditions with nonspecific instructions as to content.

The Present Study: Rationale

The present study will examine the link between relational social cognition (through observation of narrative processes) and distress from relationship dissolution. The major mechanism of interest is the process of transcending immature egocentrism to build mental representations of other people’s inner worlds, and to use these to reflect maturely on one’s own actions and experiences in a relationship; a more specific mechanism is the disposition to mobilize this process when contemplating the breakup experience. This project will also clarify one hypothesized social-cognitive developmental process that might facilitate recovery following a breakup, and/or be advanced by the course of recovery in a process akin to post-traumatic growth. These unique data allow comparison of two directions of influence, thereby contributing to knowledge about the role of relationships in social cognitive development and the recovery continuum from health to illness.
Expressive Writing essays pertaining to a traumatic life events yield fertile data for analysis; however, this is usually done by computerized word counts that strip words from context, with resulting loss of relational meaning (Jenkins, Austin, & Boals, 2013). The present study will utilize novel content-analyses to examine Interpersonal Decentering processes. What’s more, the Feffer Decentering manual (Feffer et al., 2008) as adapted for EW essays addresses many of the weaknesses brought to light in Enright and Lapsley’s (1980) review of social cognitive assessment. The implementation of this scoring system in rigidly executed studies will allow researchers to assess the adaptability of the measure to data other than EW or TAT stories. The scoring system may also be immune to the confounding aspects of practice effects or item variability, as there is minimal prompting for advanced decentering in the Stream of Consciousness (SOC) task.

Theory-of-mind processes have been well studied in children, but the implications of the spontaneous use (or neglect) of these processes by non-patient young adults has been overlooked. By studying young adults’ decentering maturation processes as they reflect on their former relationship, we may extend the research literatures on a) social perspective-taking in education (Gehlbach, 2004, 2012), b) role-taking in children (Enright & Lapsley, 1980), c) theory of mind in autism spectrum disorders (Klinger & Renner, 2000), d) mentalization in psychotherapy (Liotti & Gilbert, 2011), and e) the potential consequences of underdeveloped social cognition.

The analysis of a young adult sample will also allow for comparisons to child samples that may reinforce the notion that social role taking is a developmental phenomenon. There may be even finer distinctions in young adult populations (differences in maturity between teenagers and individuals in their 20’s or 30’s). If there is a difference in recovery trajectory related to
social cognitive maturity, additional analyses examining the characteristics of those who “bounce back” and those who do not may be conducted – with potentially important clinical implications.

Lastly, because breakups are a common life experience, they are often are the impetus to seek therapy. If it proves to be the case that perspective taking does relate to distress in a meaningful way, targeted clinical interventions to increase an individual’s inclination to spontaneously employ Decentering skills might be possible and efficacious. What’s more, public health communications about the factors that mitigate interpersonal distress post-dissolution can inform young adults’ relational decision-making processes, and may advance their relational maturation.

The following hypotheses will be tested: Hypothesis 1: Mature social cognition will be negatively correlated with depressive mood and trauma symptoms at the initial assessment. Hypothesis 2: Initial mature social cognition will predict decreases in these distress outcomes from initial assessment to the nine-week follow-up.
CHAPTER 2

METHOD

Participants

The proposed project involves secondary data analysis from a National Science Foundation-funded study (Division of Behavioral and Cognitive Sciences, #0919525, Principal Investigator David Sbarra, Ph.D., The University of Arizona) entitled “Romantic Breakups in Young Adulthood: Biopsychosocial Mechanisms of Recovery.” Eligible participants ($N = 251$; ages 17 to 29; $n = 61$ men) had experienced a romantic breakup within the last year from a relationship lasting one month or longer, and had endorsed current experiences of moderate to severe distress as a result.

After completion of initial screening surveys, participants were screened and only invited to participate if the following criteria were met: (1) self-reported good health, normotensive, and without a history of uncontrolled medical conditions, (2) not currently pregnant, (3) no history of psychotic disorders or substance abuse or dependence within the last four months, and (4) no conditions that preclude giving informed consent or travelling to and from the laboratory. Any subjects reporting active suicidal ideation, intent, and plan for suicide between the screening and initial assessment were immediately referred to the University of Arizona Psychology Clinic as well as to Dr. Sbarra for assessment. In the present sample, two subjects were referred to Counseling and Psychological Services during the course of the study for endorsement of suicidal ideation; they were permitted to continue participation in the study if interested and willing to do so.

Of the final sample of 251 participants, 90 participants were assigned to the pre-post group and 161 participants to the monthly group. One hundred and thirty seven participants
returned for the final visit at Time 4, with 67 participants in the pre-post group (26% attrition) and 70 in the monthly group (57% attrition); there was significant differential attrition based on group assignment ($\chi^2 (1, N = 251) = 22.33, \ p < .001$). Even so, Time 4 comparisons and overall hypothesis testing were performed on the sample of 137 participants who completed the full study protocol.

Individuals were asked during the first session to provide the following information: gender identity, age, and race/ethnicity. These variables were examined as potential covariates.

**Design**

Subjects were randomly assigned to one of two conditions: measurement-intensive (monthly; $n = 161$) or questionnaires only (pre-post; $n = 90$), and were not equally distributed by gender (26.7% male in the monthly condition; 20.0% male in the pre-post condition).

**Procedure**

All participants were asked to refrain from use of caffeine or tobacco for at least six hours prior to each laboratory visit. The measurement-intensive group completed detailed online questionnaires to collect demographic and relationship information, several personality and relationship self-report scales and cognitive processing measures, the Beck Depression Inventory (BDI), and a stream-of-consciousness (SOC) task. For this task, participants spoke into an audio recorder for four consecutive minutes about their break-up experience. Four prompts, spaced one minute apart, appeared on a computer screen. Participants were advised that they may use these prompts for guidance in discussing their breakup experience, but could deviate so long as they remained on the topic of the breakup. The prompts were as follows: (1) When did you realize that you and your former partner were going to break up? (2) What do you remember about the separation itself: the actual time you and your former partner actually separated? (3)
How much contact do you have with your former partner? (4) How has the breakup affected your thoughts and feelings regarding romantic relationships?

These participants returned at Time 2 (3 weeks later), Time 3 (6 weeks later) and Time 4 (9 weeks later), each time completing a condensed version of the initial questionnaire, as well as the SOC and cognitive processing tasks. In total, measurement-intensive participants dedicated about four hours to completing the study. The pre-post control group completed the same online questionnaires only at their first (T1) and last (T4) visit, with no visits in between. Each session lasted approximately 45 minutes.

The SOC recordings were transcribed, and may be scored as Expressive Writing (EW) essays (Pennebaker et al., 2007). For this study, trained volunteer undergraduate research assistants scored the transcripts using the Feffer Interpersonal Decentering Manual (Feffer et al., 2008) as adapted for EW data (Beaber, Wilson, & Jenkins, 2013; Jenkins, Austin, & Boals, 2013). The one-month training entails studying the scoring manual, completing practice-scoring sets of stories daily, and comparing their scores with expert consensus scores until they attain the reliability criterion of rho > .80 (Jenkins, 2008). Pairs of scorers score the same essay data independently, then meet together twice a week to compare results and reconcile any disagreements, which are discussed with other pairs in a weekly scoring council moderated by an expert to prevent scoring drift. Interscorer reliability is calculated on pre-discussion scores.

Measures.

*Relationship Transitions Questionnaire.* Demographic and relationship variables were assessed by the Relationship Transitions Questionnaire (See Appendix A). Demographic variables were coded in the following manner: gender (0 = male, 1 = female), race (1 = white, 2 = nonwhite). Relationship variables include duration (Q3), distance in time (Q4), ending (Q6-9),
current status (Q12), and new relationship involvement (Q27, Q29; see Table 1). Break-up related distress was assessed using two scales from the online questionnaire: Beck Depression Inventory (BDI) and the Impact of Event Scale – Revised (IES-R).

**Table 1**

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<th>Relationship Variables SPSS Coding Key</th>
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*Beck Depression Inventory -- Second Edition (BDI-II; Beck, Steer, & Brown, 1996)*. The 21-item self-report BDI-II revision has improved psychometric characteristics and reflects DSM-IV depression criteria better than the original. Based on Beck’s cognitive theory of depression, it emphasizes the role of overly negative construals in major depressive disorder. Scores range from 0 to 63; scores of 0-13 are indicative of minimal depression, 14-19 of mild depression, 20-28 of moderate depression, and 29-63 of severe depression. The BDI-II has shown very high internal consistency, and convergent and discriminant validity in multiple populations (Beck, Steer, Ball, & Ranieri, 1996; Dozois, Dobson, & Ahnberg, 1998). In this sample, the BDI-II
displayed high reliability at Time 1 ($\alpha = .89, N = 250$) and with Time 4 completers ($\alpha = .93, N = 136$).

*Impact of Event Scale – Revised (IES-R; Weiss & Marmar, 1997).* The 22-item self-report IES-R assesses ongoing response to a specific traumatic event in the domains of intrusion, avoidance, hyperarousal, and an overall subjective stress score. Trauma-related distress in the last seven days is assessed on a 5-point scale. Scores range from 0 to 88; scores of 24 or more indicate that PTSD is a clinical concern, scores of 33 or more are considered the best cutoff for a probable diagnosis of PTSD, and scores of 37 or more suggest potentially suppressed immune system functioning due to PTSD symptoms. Internal consistency alpha for subscales typically ranges from .82 to .89. In the present sample, the IES displayed high reliability at Time 1 ($\alpha = .91, N = 251$) and with Time 4 completers ($\alpha = .93, N = 136$).

*Interpersonal Decentering (Feffer, Leeper, Dobbs, Jenkins, & Perez, 2008).* The Interpersonal Decentering scoring system is designed to assess the functional maturity of an individual’s social cognitive information processing (role taking or mentalizing). The scorer identifies interaction units (same characters, time period, and location) within a narrative, and assigns each unit a Decentering score ranging from 1-9 based on the complexity of character differentiation and internalization. Scores ranging between one and four represent simplistic concrete statements without internalization. A score of one (e.g. “We all went together”) reflects characters that are not differentiated from one another. A directed action that does not evoke a response (e.g. “He told me to go”) is assigned a score of two, which increases to three if a reaction is evoked (e.g. “He told me to go and I went”), or is given a four if yet another reaction is evoked from the initiating character (e.g. “He told me to go and I went, but he called me back”).
Categories five through nine require one character internalizing another character, either as undifferentiated (five, e.g. “I was wondering about him”) or with the addition of a distinguishing feature (six, e.g. “I was wondering about his ability to play”). A score of seven is assigned when a character is internalizing another character and that character’s internal state as well (e.g. “I wanted her opinion”; “I thought she might be sad”). When a character internalizes another character, who is internalizing a third, the score is eight (e.g. “I believe my mother remembered him”). The highest score of mentalizing, nine, requires characters reflecting on their own internalized thoughts, feelings, or actions with respect to another (e.g. “I wished I hadn’t told him the truth”).

Scores are averaged across interactions for each essay. The average represents an individual’s tendency to decenter, while the high score represents an individual’s capacity for decentering. The EW adaptation protocol (Beaber, Wilson, & Jenkins, 2013) facilitates accurate scoring of the temporal discontinuities typical in EW essays. All scorers had previously obtained a minimum inter-rater reliability of Spearman’s rho > .31, \( p < .001 \) (number of interactions), Spearman’s rho > .40, \( p < .001 \) (highest Decentering score), and Spearman’s rho > .41, \( p < .001 \) (average level of Decentering) with two sets of 50 practice stories elicited with picture stimuli in the usual way. For the present study, only the last two thirds of each scoring pairs’ stories were included in inter-reliability calculations. This was to prevent potential underestimation of their reliability whilst learning to score narratives adapted from the SOC paradigm. In Table 2, individual correlations represent the inter-rater reliability between two scorers. Consensus correlations represent the inter-rater reliability between a scorer and the final scores assigned after consensus meetings and discussion.
Table 2
Decentering Scorers Inter-rater Reliability: Spearman’s Rho for SOC Data

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<td>3</td>
<td>.61**</td>
<td>.46**</td>
</tr>
<tr>
<td>4</td>
<td>.61**</td>
<td>.46**</td>
</tr>
<tr>
<td>5</td>
<td>.46**</td>
<td>.32</td>
</tr>
<tr>
<td>6</td>
<td>.46**</td>
<td>.32</td>
</tr>
</tbody>
</table>

Note. **p < .001, two-tailed. NINT = number of interactions. DCHI = highest Decentering score. DCAV = average level of Decentering.

Data Analysis Plan

Data was entered into the Statistical Package for Social Sciences (SPSS) software for analysis. Demographic variables were coded and labeled appropriately for descriptive analysis. The usual procedures were followed for cleaning data: data was visually scanned for errors and reconciled accordingly. Descriptive analyses (graphs, frequency tables, etc.) were conducted to discern the normality (modality, skewness, kurtosis) of the variables. When necessary, the data were transformed (using either loglinear transformation or bootstrapping methodologies) to more closely approximate normality.

The experimental design was tested using a repeated measures multivariate analysis of variance (MANOVA). Assumptions tested included normality, linearity, collinearity, and homoscedasticity. Prior to hypothesis testing, the influence of possible confounding factors was controlled for by analyzing correlation matrices between these variables and the outcome variables of interest. If identified, these confounding factors were effectively controlled for in
the hypothesis testing, and offered important insights pertaining to study design and future
directions.

Additionally, an attrition analysis was conducted for each condition by dummy coding
completers versus non-completers into a separate variable. Significant differences between
conditions were discerned by utilizing t-tests and chi-square comparisons, and indicated if the
sample was successfully randomized.

**Hypothesis 1.** The hypothesis that mature social cognition would be negatively correlated
with depressive mood and trauma symptoms at the initial assessment was tested using Pearson
correlations. Specifically, the following correlations were examined: (a) Time 1 Interpersonal
Decentering scores (high score and average score) and Time 1 overall score on the Beck
Depression Inventory – Second Edition and (b) Time 1 Interpersonal Decentering (high score
and average score) and Time 1 overall score on the intrusion domain of the Impact of Event
Scale - Revised. In the case of confounding factors identified in the descriptive analyses, these
were held constant in order to more clearly assess the relationship between the independent and
dependent variables of interest (partial correlation). This way, spurious causes of the
relationship were more effectively eliminated. Hypothesis 1 was supported if $r$ differed
significantly from 0 with a $p < .05$.

**Hypothesis 2.** The hypothesis that mature social cognition initially would predict
decreases in distress outcomes from initial assessment to the nine-week follow-up was tested
using hierarchical multiple regression for each Time 4 distress variable (overall score on the
Beck Depression Inventory – Second Edition and overall score on the Impact of Event Scale –
Revised), with any demographic or relationship controls entered at step one, its Time 1 score
entered at step two, and the Time 1 Decentering score (high and average) entered at step three.

Hypothesis 2 was supported if the effect size was significant with a $p < .05$. 
CHAPTER 3
RESULTS
Univariate Descriptives, Group Comparisons, & Attrition

Descriptive statistics of the individuals within both the initial and the final sample are listed below. Tables are presented for basic participant information and bivariate relationships, while comparisons between pre-post and monthly group participants at Time 1 are listed under each variable in the text. Additionally, a comparison of means is presented to test for any systematic differences between individuals who completed the study and those who did not. Gender, age, and race differences in relationship demographics, predictor variables, and outcome variables are discussed in the bivariate statistics section.

Gender. At Time 1, 75.7% of the total sample was female (n = 190), and 24.3% of the sample was male (n = 61). The pre-post group was comprised of 72 women and 18 men, and the monthly group of 118 women and 43 men; the groups did not show a significant disparity in gender composition at Time 1 ($\chi^2(1, N = 251) = 1.41, p = .24$). At Time 4, there was no significant discrepancy in gender composition between completers and non-completers ($\chi^2(1, N = 251) = 1.41, p = .15$).

Age. Participants at Time 1 were 19.35-years-old on average ($SD = 1.71$), in a distribution that ranged from 17 years to 29 years with positive skewness (2.15) and kurtosis (7.06). There was no significant difference in age between pre-post ($M = 19.11, SD = 1.45$) and monthly ($M = 19.49, SD = 1.83$) groups ($F(1, 249) = 2.86, p = .09$) or between participants who completed Time 4 measures ($M = 19.39, SD = 1.67$) and those who did not ($M = 19.35, SD = 1.71; F(1, 247) = 0.11, p = .74$). However, of those who completed Time 4 measures, those in the monthly
group were significantly older ($M = 19.73$, $SD = 1.79$) than those in the pre-post group ($M = 19.03$, $SD = 1.47$; $F(1, 135) = 6.24$, $p = .01$).

**Race.** The Time 1 sample was 64.1% White ($n = 161$) and 35.9% non-White ($n = 90$). There was a significant difference in racial composition between the pre-post and monthly groups at Time 1 ($\chi^2 (1, N = 251) = 3.98$, $p = .03$), with a greater proportion of White subjects in the pre-post group than in the monthly group. There was not a significant difference in the racial composition of participants who completed the study and those who did not ($\chi^2 (1, N = 251) = 0.68$, $p = .24$). Lastly, there were a greater proportion of White individuals that completed the final visit in the pre-post group versus the monthly group ($\chi^2 (1, N = 137) = 7.48$, $p = .01$).

**Table 3**  
*Individual Descriptive Statistics by Time and Group*

<table>
<thead>
<tr>
<th></th>
<th>$M$ Age ($SD$)</th>
<th>% Male</th>
<th>% Female</th>
<th>% White</th>
<th>% Non-white</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1, pre-post</td>
<td>19.11 (1.45)</td>
<td>7.2</td>
<td>28.7</td>
<td>25.9</td>
<td>10.0</td>
</tr>
<tr>
<td>Time 1, monthly</td>
<td>19.49 (1.83)</td>
<td>17.1</td>
<td>47.0</td>
<td>38.2</td>
<td>25.9</td>
</tr>
<tr>
<td>Time 4, pre-post</td>
<td>19.03 (1.47)</td>
<td>11.7</td>
<td>37.2</td>
<td>40.0</td>
<td>10.9</td>
</tr>
<tr>
<td>Time 4, monthly</td>
<td>19.73 (1.79)</td>
<td>15.3</td>
<td>35.8</td>
<td>28.5</td>
<td>22.6</td>
</tr>
</tbody>
</table>

*Note:* N = 251 for Time 1, N = 137 for Time 4.

Descriptive statistics of the variables related to the relationship are listed below. Tables with basic information are provided, while more in-depth analyses between groups at Time 1 are provided within the text. Additionally, a comparison of means is presented to test for any systematic differences between individuals who completed the study and those who did not.

**Length of relationship.** The average length of relationship for the overall sample at Time 1 was 20.18 months ($SD = 13.93$), with a minimum length of 1 month and a maximum length of 86 months. The distribution is slightly positively skewed (1.33).
The pre-post group at Time 1 had an average relationship length of 18.68 months ($SD = 12.76$), while the monthly group at Time 1 had an average length of 21.02 months ($SD = 14.51$). There was not a significant difference in relationship length between the pre-post and monthly group averages ($F(1, 249) = 1.62, p = .20$). The difference in relationship length between non-completers ($M = 22.03$ months, $SD = 15.54$) and completers ($M = 18.63$ months, $SD = 12.27$) of the Time 4 follow-up visit was significant ($F(1, 249) = 3.75, p = .05$).

*Time since breakup.* The average number of months since the breakup for the total sample at Time 1 was 3.56 ($SD = 2.48$), with a minimum of approximately one week prior to the study and a maximum of approximately one year. Skew and kurtosis values (1.02 and 0.70, respectively) were acceptable. There was no significant difference between the pre-post and monthly groups at Time 1 ($F(1, 249) = 0.16, p = .69$). However, there was a significant difference in time elapsed since the breakup between the participants who completed the study ($M = 3.10$ months, $SD = 2.12$) and those who did not ($M = 4.10$ months, $SD = 2.76$; $F(1, 249) = 10.48, p < .01$).

*Breakup initiator.* At Time 1, 41.4% of the participants cited themselves as the person who first said or did something that initiated the end of the relationship, whereas their partner was deemed responsible in 58.6% of the cases. There was no difference in initiator identity between the pre-post and monthly groups at Time 1 ($\chi^2 (1, N = 251) = 0.38, p = .32$), or between participants who completed the study and those who did not ($\chi^2 (1, N = 251) = 0.04, p = .47$).

*Suggestion status.* There was a nearly even split between participants who first suggested ending the relationship (50.2%, $N = 126$) relative to participants whose partner first made the suggestion (49.8%, $N = 125$). There was a significant difference in suggestion status between the pre-post and monthly groups, with a greater proportion of participants making the suggestion in
the pre-post group (62% versus 43% in the monthly group; $\chi^2(1, N = 251) = 8.11, p < .01$).
However, completers did not differ from non-completers in this regard ($\chi^2(1, N = 251) = 0.10, p = .43$).

**Decision making status.** At Time 1, 46.8% of the participants endorsed themselves as the one who made the final decision to break up; 53.2% reported their partner as the decision maker. The pre-post and monthly groups did not differ significantly ($\chi^2(1, N = 251) = 2.00, p = .10$), nor did completers versus non-completers ($\chi^2(1, N = 251) = 2.07, p = .10$).

**Responsibility for break-up.** Ten percent of participants reported full personal responsibility for the break-up and 16.7% rated their partner as fully responsible. The majority of participants indicated that responsibility was mutual: 29.9% indicated that both parties were responsible, but more so themselves and 43.4% endorsed mutual responsibility, though more so their partner. The pre-post and monthly groups did not differ significantly in allocation of responsibility ($t(249) = -1.02, p = .31$; $\chi^2(3, N = 251) = 4.36, p = .23$), nor did the completers versus non-completers ($t(249) = -1.06, p = .29$; $\chi^2(3, N = 251) = 5.38, p = .15$).

**Current relationship status with ex-partner.** At the time of the first visit, 5.6% of participants described their current relationship status with their ex as “best friends,” 20.3% as “close friends,” 23.9% as “friends,” 23.5% as “acquaintances,” and 2.0% as “enemies.” Current relationship status with ex did not differ significantly between the pre-post and monthly groups ($t(249) = -0.45, p = .65$; $\chi^2(5, N = 251) = 1.62, p = .90$) or between completers and non-completers ($t(249) = -0.70, p = .48$; $\chi^2(5, N = 251) = 9.20, p = .10$).

**New relationship.** Only 19.5% of participants had entered into a new romantic relationship at Time 1. There was a significant difference in distribution between the pre-post and monthly groups ($\chi^2(1, N = 251) = 4.56, p = .03$), with a greater proportion of individuals in
the pre-post group (27% versus 16% in the monthly group) having entered a new relationship. There was not a significant difference in new relationship status between completer and non-completer groups ($\chi^2 (1, N = 251) = 0.31, p = .34$).

*Commitment to new relationship.* Of the 49 individuals who had entered into a new relationship, 38.8% described their level of commitment as “dating casually – not committed at all,” 28.6% as “considering a committed relationship, but not sure yet,” and 32.7% as “committed to the relationship.” The pre-post and monthly groups did not differ in level of commitment to the new relationship ($\chi^2 (2, N = 49) = 1.60, p = .45$), nor did the completers and non-completers ($\chi^2 (2, N = 49) = 0.57, p = .75$).

*Table 4*

<table>
<thead>
<tr>
<th>Relationship Descriptive Statistics by Time and Group: Mean (SD) in months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Relationship</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Time 1, pre-post</td>
</tr>
<tr>
<td>Time 1, monthly</td>
</tr>
<tr>
<td>Time 4, pre-post</td>
</tr>
<tr>
<td>Time 4, monthly</td>
</tr>
</tbody>
</table>


_Predictor Variables._ The highest Decentering level mean for the monthly group at Time 1 was 6.83 ($SD = 2.15$, ranging from 1 to 9; see Table 4). There was not a significant difference in highest level between completers and non-completers ($F(1, 159) = 0.68, p = .41$). The mean of Decentering average scores for the monthly group at Time 1 was 3.36 ($SD = 1.36$, ranging from 1 to 8.25). There was not a significant difference in average Decentering level between completers and non-completers ($F(1, 159) = 2.60, p = .11$). There was not a significant difference in number of interactions per SOC transcription between completers and non-completers ($F(1, 159) = 0.001, p = .98$). The number of scorable interactions within a SOC
transcription was significantly correlated with average level of Decentering ($r = - .25, p < .001$), indicating that a greater number of interactions were associated with lower average levels of Decentering. There was not a significant relationship between number of interactions and highest level of Decentering ($r = .14, p = .07$).

**Table 5**

<table>
<thead>
<tr>
<th></th>
<th>DC HI (SD)</th>
<th>DC AVG (SD)</th>
<th>N INT (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T1 Overall</strong></td>
<td>6.83 (2.15)</td>
<td>3.36 (1.37)</td>
<td>6.52 (2.80)</td>
</tr>
<tr>
<td><strong>T4 Completers</strong></td>
<td>6.99 (2.01)</td>
<td>3.56 (1.39)</td>
<td>6.51 (2.84)</td>
</tr>
<tr>
<td><strong>T4 Non-Completers</strong></td>
<td>6.70 (2.25)</td>
<td>3.21 (1.33)</td>
<td>6.53 (2.78)</td>
</tr>
</tbody>
</table>


**Outcome Variables.** The average depression score at Time 1 was 11.54 ($SD = 8.56$, ranging from 0 to 46). One subject submitted an incomplete BDI-II, and was thereby excluded from these analyses. There was not a significant difference in initial depression scores based on group assignment ($F(1, 248) = 2.96, p = .09$). Those who completed visit 4 had been significantly more depressed initially than those who did not complete the study ($F(1, 248) = 5.48, p = .02$). For the 136 completed BDI-IIs at Time 4, the average score was 7.88 ($SD = 8.23$, ranging from 0 to 45). The pre-post and monthly groups did not differ significantly in depression scores at the final visit ($F(1, 134) = 0.60, p = .81$).

The average IES-R score at Time 1 was 35.89 ($SD = 16.45$, ranging from 0 to 82). There was a significant difference in levels of PTSD symptoms between the pre-post and monthly groups ($F(1, 249) = 9.61, p < .01$), with individuals in the monthly group reporting significantly higher distress than those assigned to the pre-post group. At Time 4, the average distress level was 21.33 ($SD = 16.45$, ranging from 0 to 66). There was not a significant difference in level of
distress at the final visit between those assigned to pre-post versus monthly groups ($F(1, 134) = 0.03, p = .86$).

**Table 6**

*Outcome Variable Descriptive Statistics by Group: Mean (SD)*

<table>
<thead>
<tr>
<th></th>
<th>Time 1 BDI</th>
<th>Time 4 BDI</th>
<th>Time 1 IES</th>
<th>Time 4 IES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-post</td>
<td>10.29 (8.69)</td>
<td>7.70 (8.11)</td>
<td>31.66 (16.46)</td>
<td>21.59 (15.43)</td>
</tr>
<tr>
<td>Monthly</td>
<td>12.23 (8.44)</td>
<td>8.04 (8.40)</td>
<td>38.25 (16.02)</td>
<td>21.10 (17.46)</td>
</tr>
</tbody>
</table>

*Note.* Means with the same subscript differ significantly at $p < .001$. BDI = Beck Depression Inventory II. IES = Impact of Events Scale – Revised. N = 250 for Time 1 BDI. N = 136 for Time 4 BDI. N = 251 for Time 1 IES. N = 136 for Time 4 IES.

Bivariate associations.

The following associations are significant at $p < .05$. See Tables 7-11 for correlations.

Women in the study tended to be slightly younger than their male counterparts ($\phi = -.14$), were negligibly more likely to suggest the breakup ($\phi = -.16$), and were slightly more likely to have entered into a new romantic relationship ($\phi = .16$; see Table 4). Older participants tended to have been in longer relationships prior to the breakup ($r = .17$) and were slightly more likely to have initiated the breakup ($\phi = -.13$) than younger participants. Women tended to exhibit higher maximum Decentering scores ($\phi = .22$; see Table 7) than men. White individuals (race coded White = 1, Nonwhite = 2) tended to exhibit slightly higher maximum Decentering scores ($\phi = -.19$) as well as higher average Decentering scores ($\phi = -.21$) than their non-white counterparts. Decentering highest scores were strongly correlated with Decentering average scores ($r = .67$). There were no significant correlations for individual demographics with outcome variables.

Those who were in longer relationships tended to assume greater responsibility for the breakup ($r = -.13$; see Table 9) than participants that were in shorter relationships. Greater time elapsed since the breakup was associated with identifying as the one to suggest the breakup ($\phi = -.15$), increased likelihood of having entered a new relationship ($\phi = .22$), and feelings of
commitment to the new relationship \( (r = .38) \). Compared with those who were broken up with, those who initiated the breakup were often also those that suggested the breakup \( (\phi = .35) \), ultimately decided to breakup \( (\phi = .33) \) and claimed responsibility for the breakup \( (r = .45) \). Those who suggested the breakup were often those that decided to breakup \( (\phi = .51) \) and took responsibility for the breakup \( (r = .37) \). These same individuals were more likely to have entered a new relationship \( (\phi = -.15) \) and endorsed higher levels of commitment to the new relationship \( (\phi = -.46) \) than those whose partner suggested the breakup. Those who decided to breakup tended to accept greater breakup responsibility \( (\phi = .40) \) than those whose partner made the decision. Relative to those who felt less responsibility for the breakup, individuals who assumed responsibility for the breakup tended to report a closer relationship with their ex-partner after the breakup \( (r = .15) \). Those who reported a closer current relationship to their ex-partner were less likely to have entered into a new romantic relationship \( (\phi = .13) \) than those who reported negative or no relationship with their ex-partner.

Interestingly, individuals who made the final decision to breakup with their partner exhibited significantly higher high Decentering scores \( (\phi = -.18) \) as well as higher average Decentering tendencies \( (\phi = -.21) \) than those whose partner made the final decision to breakup; there was no relationship between Decentering variables and other relationship variables. After factoring the related relationship variables together (see Factor Analysis section below), the relationship between level of responsibility for the breakup and Decentering high and average scores persisted \( (\phi = -.19 \text{ and } \phi = -.18, \text{ respectively}) \).

Those who had broken up more recently tended to have negligibly higher BDI scores at Time 1 \( (r = -.13; \text{ see Table 10}) \) relative to those from whom more time had elapsed since the breakup. Participants whose ex-partner suggested the breakup, decided to breakup, or was
responsible for the breakup reported slightly higher IES scores at Time 1 ($\phi = .19$, $\phi = .14$, $r = .13$, respectively) than those who themselves made the suggestion, decision, and were ultimately responsible. This was also true for participants that reported a more negative current relationship with their ex-partner ($r = .13$). Time 1 BDI and Time 1 IES scores were strongly correlated with one another ($r = .61$).

Time 4 IES scores were higher for individuals who did not suggest or decide to breakup, and for those who reported more negative current relationships with their ex-partner ($\phi = .26$, $\phi = .26$, and $r = .18$, respectively) relative to those who did suggest and/or decide to breakup and those who reported positive relationships with their ex-partner. Time 4 BDI and Time 4 IES scores were strongly correlated with one another ($r = .60$).

Time 1 BDI scores were moderately correlated with Time 4 BDI scores ($r = .50$; see Table 10) and Time 4 IES scores ($r = .32$). Time 1 IES scores were moderately positively correlated with Time 4 IES scores ($r = .47$) and Time 4 BDI score ($r = .33$).

**Table 7**

*Pearson Correlations Between Demographic and Relationship Variables (N = 251)*

<table>
<thead>
<tr>
<th>1. Relationship Length</th>
<th>.10</th>
<th>.17**</th>
<th>.04</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Months Since Breakup</td>
<td>.04</td>
<td>-.05</td>
<td>.10</td>
</tr>
<tr>
<td>3. Initiate</td>
<td>-.04</td>
<td>-.13*</td>
<td>-.06</td>
</tr>
<tr>
<td>4. Suggest</td>
<td>-.16*</td>
<td>.06</td>
<td>.05</td>
</tr>
<tr>
<td>5. Decide</td>
<td>-.10</td>
<td>.01</td>
<td>.06</td>
</tr>
<tr>
<td>6. Responsibility</td>
<td>-.05</td>
<td>.01</td>
<td>-.01</td>
</tr>
<tr>
<td>7. Current Status Ex</td>
<td>-.05</td>
<td>.07</td>
<td>.01</td>
</tr>
<tr>
<td>8. New Relationship</td>
<td>.16*</td>
<td>.07</td>
<td>-.01</td>
</tr>
<tr>
<td>9. Commitment to New Rel.</td>
<td>.22</td>
<td>-.05</td>
<td>.16</td>
</tr>
</tbody>
</table>

*Note.* *p < .05, two-tailed. **p < .001, two-tailed.
Gender coded as 0 = male, 1 = female. Race coded as 1 = white, 2 = nonwhite. Initiate = breakup initiator (1 = self, 2 = ex-partner), Suggest = suggested breakup (1 = self, 2 = ex-partner), Decide = decision to breakup (1 = self, 2 = ex-partner), Resp. = responsibility for breakup (1 = self; 2 = both, but more so self; 3 = both, but more so ex-partner; 4 = ex-partner), Status Ex = current relationship status with ex-partner (1 = best friends, 2 = close friends, 3 = friends, 4 = acquaintances, 5 = no relationship at all, 6 = enemies), New Rel. = new relationship (0 = no, 1 = yes), and Commit. = commitment to new relationship (0 = no new relationship; 1 = dating casually, not committed; 2 = considering a committed relationship; 3 = committed to the relationship; 4 = committed to the relationship and living together; 5 = engaged to new person; 6 = married to new person).

Table 8
Pearson Correlations Between Demographic and Predictor Variables (N = 161)

<table>
<thead>
<tr>
<th></th>
<th>DCHI</th>
<th>DCAV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>.22**</td>
<td>.15</td>
</tr>
<tr>
<td>Age</td>
<td>-.04</td>
<td>.09</td>
</tr>
<tr>
<td>Race</td>
<td>-.19*</td>
<td>-.21**</td>
</tr>
<tr>
<td>Highest Decentering Score</td>
<td>1</td>
<td>.67**</td>
</tr>
<tr>
<td>Average Decentering Score</td>
<td>.67**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. *p < .05, two-tailed. **p < .001, two-tailed.
Gender coded as 0 = male, 1 = female. Race coded as 1 = white, 2 = nonwhite. DCHI = highest Decentering score in transcription, DCAV = average of Decentering scores throughout transcription.

Table 9
Pearson Correlations Among Relationship Variables (N = 251)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rel. Len.</td>
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<td>--</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2. M. Since</td>
<td>.11</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3. Initiate</td>
<td>-.07</td>
<td>-.08</td>
<td>1</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4. Suggest</td>
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<td>--</td>
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</tr>
<tr>
<td>5. Decide</td>
<td>-.10</td>
<td>-.04</td>
<td>.33**</td>
<td>.51**</td>
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<tr>
<td>6. Resp.</td>
<td>-.13*</td>
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<td>.37**</td>
<td>.40**</td>
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<td>7. Status Ex</td>
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<td>.08</td>
<td>.00</td>
<td>-.03</td>
<td>.03</td>
<td>.15*</td>
<td>1</td>
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</tr>
<tr>
<td>8. New Rel.</td>
<td>-.10</td>
<td>.22**</td>
<td>-.01</td>
<td>-.15*</td>
<td>-.10</td>
<td>.07</td>
<td>.13*</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>9. Commit.</td>
<td>-.04</td>
<td>.38**</td>
<td>.08</td>
<td>-.46**</td>
<td>-.13</td>
<td>.01</td>
<td>.20</td>
<td>a</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. *p < .05, two-tailed. **p < .001, two-tailed.
Rel. Len. = Relationship Length (months). M. Since = Months Since breakup. Initiate = breakup initiator (1 = self, 2 = ex-partner), Suggest = suggested breakup (1 = self, 2 = ex-partner), Decide = decision to breakup (1 = self, 2 = ex-partner), Resp. = responsibility for breakup (1 = self; 2 = both, but more so self; 3 = both, but more so ex-partner; 4 = ex-partner), Status Ex = current relationship status with ex-partner (1 = best friends, 2 = close friends, 3 = friends,
4 = acquaintances, 5 = no relationship at all, 6 = enemies), New Rel. = new relationship (0 = no, 1 = yes), and Commit. = commitment to new relationship (0 = no new relationship; 1 = dating casually, not committed; 2 = considering a committed relationship; 3 = committed to the relationship; 4 = committed to the relationship and living together; 5 = engaged to new person; 6 = married to new person).

Table 10

<table>
<thead>
<tr>
<th>Pearson Correlations Between Demographic/Relationship and Outcome Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Race</td>
</tr>
<tr>
<td>Relationship Length</td>
</tr>
<tr>
<td>Months Since Breakup</td>
</tr>
<tr>
<td>Initiate</td>
</tr>
<tr>
<td>Suggest</td>
</tr>
<tr>
<td>Decide</td>
</tr>
<tr>
<td>Responsibility</td>
</tr>
<tr>
<td>Current Status Ex</td>
</tr>
<tr>
<td>New Relationship</td>
</tr>
<tr>
<td>Commit. New Relationship</td>
</tr>
</tbody>
</table>

Note. *p < .05, two-tailed. **p < .001, two-tailed.

Gender coded as 0 = male, 1 = female. Race coded as 1 = white, 2 = nonwhite. Initiate = breakup initiator (1 = self, 2 = ex-partner). Suggest = suggested breakup (1 = self, 2 = ex-partner). Decide = decision to breakup (1 = self, 2 = ex-partner). Resp. = responsibility for breakup (1 = self; 2 = both, but more so self; 3 = both, but more so ex-partner; 4 = ex-partner). Status Ex = current relationship status with ex-partner (1 = best friends, 2 = close friends, 3 = friends, 4 = acquaintances, 5 = no relationship at all, 6 = enemies). New Rel. = new relationship (0 = no, 1 = yes), and Commit. = commitment to new relationship (0 = no new relationship; 1 = dating casually, not committed; 2 = considering a committed relationship; 3 = committed to the relationship and living together; 5 = engaged to new person; 6 = married to new person). BDI T1 = depression scores at Time 1. IES T1 = distress scores at Time 1. BDI T4 = depression scores at Time 4. IES T4 = distress scores at Time 4.
Table 11
Pearson Correlations Among Outcome Variables

<table>
<thead>
<tr>
<th></th>
<th>BDI T1 (N = 250)</th>
<th>IES T1 (N = 250)</th>
<th>BDI T4 (N = 135)</th>
<th>IES T4 (N = 135)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI T1</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>IES T1</td>
<td>.61**</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>BDI T4</td>
<td>.50**</td>
<td>.33**</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>IES T4</td>
<td>.32**</td>
<td>.47**</td>
<td>.60**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. *p < .05, two-tailed. **p < .001, two-tailed.
BDI T1 = depression scores at Time 1. IES T1 = distress scores at Time 1. BDI T4 = depression scores at Time 4. IES T4 = distress scores at Time 4.

Factor Analysis

Given the high correlations between several of the relationship variables, a factor analysis was employed to reduce unnecessary data and minimize degrees of freedom in subsequent analyses. Initially, the factorability of the four relationship items (suggestion status, initiator status, decision-making status, and responsibility for breakup) was examined. Several well-recognized criteria for the factorability of a correlation were used. First, all of the items correlated at least .3 with at least one other item, suggesting reasonable factorability. Second, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.72, above the recommended value of 0.60, and Bartlett’s test of sphericity was significant ($\chi^2 (6) = 200.86, p < .05$). Finally, the communalities were all above .3 (see Table 12), further confirming that each item shared sufficient common variance with other items. Given these overall indicators, factor analysis was conducted with all four items.

Principle components analysis was used to reduce the dimensions of this dataset. The initial eigenvalues showed that the first factor explained 55% of the variance, the second factor 19% of the variance, a third factor 14% of the variance, and a fourth factor 12% of the variance. Only the first factor yielded an eigenvalue of over one. Because a single factor solution was
examined, rotations of the factor-loading matrix could not be analyzed. The single factor solution, which explained 55% of the variance, was preferred because of the ‘leveling off’ of eigenvalues on the scree plot after the first factor, and the insufficient number of primary loadings and difficulty of interpreting the additional factors.

For the purposes of hypothesis testing, composite scores were created for the new factor, by standardizing scores for each item, and then averaging the four z-scores. Higher scores indicated that the ex-partner played a more prominent role in the breakup process. The new factor will be referred to as partner breakup responsibility in subsequent analyses.

Table 12

<table>
<thead>
<tr>
<th>Factor loadings and communalities based on a principle components analysis for 4 items from Relationship Transitions Questionnaire (N = 251)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1 Loading</td>
</tr>
<tr>
<td>Breakup initiation</td>
</tr>
<tr>
<td>Breakup suggestion</td>
</tr>
<tr>
<td>Breakup decision</td>
</tr>
<tr>
<td>Breakup responsibility</td>
</tr>
</tbody>
</table>

Multivariate Analysis of Variance (MANOVA)

A repeated measures multivariate analysis of variance (MANOVA) was conducted to determine whether Time 1 to Time 4 BDI and IES scores changed differently based on group assignment (monthly/pre-post). Averaging across both time and the dependent variables, the pre-post and monthly groups do not differ significantly from one another, $F(1, 249) = 1.09, p = .34, \eta^2 = .02$. Averaging across group assignment and the dependent variables, there is significant average change over time $F(1, 249) = 50.30, p < .001, \eta^2 = .43$, and this change is significantly different between groups $F(1, 249) = 3.25, p = .04, \eta^2 = .05$. 
Both the BDI and IES changed significantly over time, \( F(1, 249) = 47.15, p < .001, \eta^2 = .26 \) and \( F(1, 249) = 99.10, p < .001, \eta^2 = .43 \), respectively. However, only the IES changed differently between groups \( F(1, 249) = 6.54, p = .01, \eta^2 = .05 \), while the BDI did not, \( F(1, 249) = 2.26, p = .14, \eta^2 = .02 \).

Hypothesis Testing

_Hypothesis 1._ To determine whether highest or average level of Decentering was related to initial depression levels, a partial correlation was run, controlling for time since the breakup. There does not appear to be a significant relationship between these variables \( (r = -.08, p = .32 \) and \( r = -.13, p = .11 \), respectively). When run separately by gender, there was a significant relationship between average level of Decentering (though not highest level) and BDI scores for women only \( (r = -.18, p = .05) \). There was no relationship between high or average level of Decentering and BDI scores for men \( (r = -.04, p = .81 \) and \( r = .05, p = .77 \), respectively). A partial correlation was run between initial distress (as operationalized by the IES) and highest/average Decentering levels, controlling for time since the breakup, partner breakup responsibility, and current relationship status with ex-partner. These results also were not significant \( (r = -.03, p = .73 \) and \( r = -.09, p = .25) \), and remained nonsignificant when run separately by gender.

_Hypothesis 2._ A three-step hierarchical multiple regression was conducted with Time 4 BDI score as the dependent variable (Tables 13 and 14). Gender and new relationship commitment were controlled for in step one. Time 1 BDI scores were entered at step two of the regression to control for initial levels of depression. The Decentering variables (high score and average) were entered at step three. The highly significant correlations between Time 1 and Time 4 BDI scores justified entering the former as the second block of the regression, in order to
fully control for this relationship prior to examining the impact of Decentering. Because of the high correlation between highest and average Decentering scores, the regression was run separately for each.

**Table 13**

*Hierarchical Multiple Regression Analysis for Highest Level of Decentering Predicting Time 4 BDI*

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th></th>
<th></th>
<th>Step 2</th>
<th></th>
<th></th>
<th>Step 3</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$\beta$</td>
<td>Sig</td>
<td>$B$</td>
<td>$SE$</td>
<td>$B$</td>
<td>Sig</td>
<td>$B$</td>
</tr>
<tr>
<td>Gender</td>
<td>-2.27</td>
<td>2.26</td>
<td>-.13</td>
<td>.32</td>
<td>-1.49</td>
<td>1.98</td>
<td>-.08</td>
<td>.46</td>
<td>-1.85</td>
</tr>
<tr>
<td>Com.</td>
<td>-0.95</td>
<td>1.37</td>
<td>-.09</td>
<td>.49</td>
<td>-1.09</td>
<td>1.19</td>
<td>-.10</td>
<td>.36</td>
<td>-1.01</td>
</tr>
<tr>
<td>BDI T1</td>
<td></td>
<td>0.50</td>
<td>.11</td>
<td>.50</td>
<td>0.00</td>
<td>0.51</td>
<td>.11</td>
<td>.50</td>
<td>0.00</td>
</tr>
<tr>
<td>DC HI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.03</td>
<td>.38</td>
<td>0.27</td>
<td>.00</td>
<td>0.28</td>
<td>.00</td>
<td>0.28</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>$F_{\Delta}$</td>
<td>0.98</td>
<td></td>
<td>22.27</td>
<td></td>
<td>0.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Com. = Commitment to New Relationship (0 = no new relationship; 1 = dating casually, not committed; 2 = considering a committed relationship; 3 = committed to the relationship; 4 = committed to the relationship and living together; 5 = engaged to new person; 6 = married to new person). BDI T1 = Beck Depression Inventory Time 1. DC HI = highest Decentering score. N = 135.

At step one, gender and commitment to new relationship did not contribute significantly to the model, $F(2,67) = 0.98$, $p = .38$ and accounted for 3% of the variation in Time 4 depression scores. At step two, initial depression scores contributed significantly to the regression model, $F_{\text{change}}(1,66) = 22.27$, $p < .001$ and accounted for an additional 25% of the variation in Time 4 depression scores. Introducing the highest level of Decentering variable explained less than 1% of additional variation in Time 4 depression scores; and was not significant, $F_{\text{Change}}(1,65) = 0.29$, $p = .59$). Results did not differ significantly when run separately by gender.
Table 14
Hierarchical Multiple Regression Analysis for Average Level of Decentering Predicting Time 4 BDI

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
<th></th>
<th>Step 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td>Sig</td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Gender</td>
<td>-2.27</td>
<td>2.26</td>
<td>-.13</td>
<td>.32</td>
<td>-1.49</td>
<td>1.98</td>
</tr>
<tr>
<td>Com.</td>
<td>-0.95</td>
<td>1.37</td>
<td>-.09</td>
<td>.49</td>
<td>-1.09</td>
<td>1.19</td>
</tr>
<tr>
<td>BDI T1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.50</td>
<td>0.11</td>
</tr>
<tr>
<td>DC AV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.05</td>
<td>0.66</td>
</tr>
<tr>
<td>R²</td>
<td>0.03</td>
<td>.38</td>
<td>0.27</td>
<td>.00</td>
<td>0.27</td>
<td>.95</td>
</tr>
<tr>
<td>FΔ</td>
<td>0.98</td>
<td>22.27</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Com. = Commitment to New Relationship (0 = no new relationship; 1 = dating casually, not committed; 2 = considering a committed relationship; 3 = committed to the relationship; 4 = committed to the relationship and living together; 5 = engaged to new person; 6 = married to new person). BDI T1 = Beck Depression Inventory Time 1. DC AV = average level of Decentering. N = 135.

When rerun with average level of Decentering in the final block, the results were as follows: at step one, gender and commitment to new relationship did not contribute significantly to the model, $F(2,67) = 0.98$, $p = .38$ and accounted for 3% of the variation in Time 4 depression scores. At step two, initial depression scores contributed significantly to the regression model, $F\text{ change}(1,66) = 22.27$, $p < .001$ and accounted for an additional 25% of the variation in Time 4 depression scores. Introducing the average level of Decentering variable explained less than 1% of additional variation in Time 4 depression scores; and was not significant, $F\text{ Change}(1,65) = 0.01$, $p = .95$). Results did not differ significantly when run separately by gender.

For the second analysis, a three-step hierarchical multiple regression was conducted with Time 4 IES score as the dependent variable (Tables 15 and 16). Because of the significant bivariate correlations between the relationship variables and Time 4 IES, the new composite variable for breakup responsibility was entered at step one of the regression. Because of high correlations with Time 4 IES score, Time 1 IES scores were entered at step two of the regression.
to control for initial levels of PTSD-related distress. The average level of Decentering variable was entered at step three. Because of the high correlation between highest and average Decentering scores, the regression was run separately for each.

**Table 15**
Hierarchical Multiple Regression Analysis for Highest Level of Decentering Predicting Time 4 PTSD

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Resp.</td>
<td>4.61</td>
<td>2.76</td>
<td>.20</td>
</tr>
<tr>
<td>IES Time 1</td>
<td>0.44</td>
<td>0.12</td>
<td>.43</td>
</tr>
<tr>
<td>DC High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.04</td>
<td>.10</td>
<td>.21</td>
</tr>
<tr>
<td>$F_{\Delta}$</td>
<td>2.78</td>
<td>14.65</td>
<td>0.45</td>
</tr>
</tbody>
</table>


At step one, breakup responsibility did not contribute significantly to the regression model, $F(1,68) = 2.78, p = .10$ and accounted for 3.9% of the variation in Time 4 PTSD-related distress scores. Introducing the Time 1 IES scores explained an additional 17.2% of the variance, and contributed significantly to the model $F_{\Delta}(1,67) = 14.65, p < .001$. Lastly, highest level of Decentering explained an additional 1% of variation in Time 4 PTSD-related distress scores, though this change in $R^2$ was not significant, $F_{\Delta}(1,66) = 0.45, p = .50$. Results did not differ significantly when run separately by gender.
Table 16
Hierarchical Multiple Regression Analysis for Average Level of Decentering Predicting Time 4 IES

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE_B$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Resp.</td>
<td>4.61</td>
<td>2.76</td>
<td>.20</td>
</tr>
<tr>
<td>IES Time 1</td>
<td>.44</td>
<td>.12</td>
<td>.43</td>
</tr>
<tr>
<td>DC AV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.04</td>
<td>.10</td>
<td>.21</td>
</tr>
<tr>
<td>$F_{\Delta}$</td>
<td>2.78</td>
<td>14.64</td>
<td></td>
</tr>
</tbody>
</table>


When rerun with average level of Decentering in the final block, the results were as follows: at step one, breakup responsibility did not contribute significantly to the regression model, $F(1,68) = 2.77, p = .10$ and accounted for 3.9% of the variation in Time 4 PTSD-related distress scores. Introducing the Time 1 IES scores explained an additional 17.2% of the variance, and contributed significantly to the model $F_{\text{change}}(1,67) = 14.65, p = .00$. Lastly, average level of Decentering explained less than 1% of additional variation in Time 4 PTSD-related distress scores; this change in $R^2$ was not significant, $F_{\text{change}}(1,66) = 0.04, p = .83$.

Results did not differ significantly when run separately by gender.
CHAPTER 4
DISCUSSION

Because of the ubiquitous nature of breakups and divorce, a better understanding of the nature of recovery from this common life stressor was of particular interest in the present study. Specifically, it was posited that Interpersonal Decentering, a Theory of Mind construct designed to assess perspective-taking capabilities in relational understanding, might act as a mechanism in the management of sadness or PTSD symptoms following a relational loss. This construct has often been examined in child and adolescent populations (Enright & Lapsley, 1980), though infrequently examined in adults for whom the implications may be equally important. Furthermore, written transcripts following traumatic life experiences have sometimes been examined in the psychological literature (Jenkins, Austin, & Boals, 2013; Pennebaker, 1997); however, verbal transcripts have not been as well studied, though may yield similarly beneficial results following a relational loss. In the present study, we hypothesized that more mature perspective taking would be related to lower levels of depressive and posttraumatic symptomatology following a breakup. The paragraphs herein will examine the findings related to these hypotheses.

Main Findings

The repeated measures MANOVA analysis yielded results indicating that both groups, regardless of exposure to the Stream of Consciousness exercise, showed significant decreases in PTSD-symptomatology, as operationalized by the Impact of Events Scale. However, the monthly and pre-post groups had significantly different levels of change in PTSD symptoms from Time 1 to Time 4. The monthly group in particular saw significantly greater decreases in
PSTD symptoms between Time 1 and Time 4 relative to the pre-post group. It may be the case that participation in the SOC exercise explains these differences in change.

However, the groups’ BDI levels did not change significantly differently from one another between Time 1 and Time 4 (though there were overall decreases for both groups over time). It seems to be the case that the SOC exercise, while efficacious in alleviating PTSD symptoms over time, was not as effective in the amelioration of depressive symptomatology. Though some research findings suggest that oral disclosure had greater post-intervention associations with decreased negative mood relative to written disclosure (Harrist, Carlozzi, McGovern, & Harrist, 2007), it is possible that the oral component of SOC exercise was not as efficacious in ameliorating feelings of depression as Expressive Writing exercises may have been. However, extant literature suggests that both talking and writing about upsetting experiences can yield improvements in physical and psychological health (Frattaroli, 2006; Pennebaker, 1993).

It is possible that oral disclosure in the absence of feedback from the researcher was awkward for participants, and interfered with full engagement in the task at hand. In Frattaroli’s meta-analysis (2006), studies in which subjects were instructed to discuss upsetting experiences orally to an experimenter did yield slightly larger effect sizes than those in which they orally disclosed to a tape recorder (as was done in the present study). The difference was non-significant though, due to the very low number of studies examining oral experimental disclosure. However, the same might be said for discomfort felt by discussing a highly emotional and potentially embarrassing relational loss with a complete stranger, and should be investigated further.
Additionally, the prompts issued during the SOC exercise were not exact renditions of the traditional EW prompt; in fact, they were considerably different. The EW prompt calls for exploring deepest thoughts and feelings related to the traumatic event, and allows for flexibility in the nature and direction of the writing, so long as it pertains to the upsetting event at hand. In contrast, the two prompts for the SOC exercise call for very specific aspects of the upsetting event: (1) when the participant first realized that they were headed toward a breakup and (2) what they remember about the actual separation itself. Though participants were advised that they could deviate from the provided prompts, most did not. The term “stream of consciousness” typically refers to a continuous uninterrupted flow of thoughts and ideas on a subject. To call the task in the present study an exercise in stream of consciousness (SOC) may have been a misnomer.

As such, the narratives generated from the verbal SOC task read quite differently than those generated by Expressive Writing prompts in that there is a marked lack of coherence and organization. In fact, the average number of interactions per SOC transcription is considerably higher than is usually seen with EW or TAT narratives, and as number of interactions increased, average level of Decentering decreased. Perhaps trying to express oneself out loud in immediate response to a highly structured and constrained prompt allowed less time for planning and flexibility than would typically be available in the more open-ended EW paradigm. It may be the case that subjects in the present study struggled to attend to the stringent SOC requirements, and subsequently offered more disjointed and fragmented accounts of the breakup experience (and exhibited lower levels of perspective taking). Had they explored aspects of the breakup outside of the optional prompts, there may have been increased coherence in the SOC narratives.
For these reasons, the comparability of Decentering scoring for EW and SOC narratives is unclear at this time.

The temporal context of the prompt may also play a role in Decentering results. Research by Jenkins, Austin, & Boals (2013) suggests that there are stronger associations between mature Decentering and emotionally valenced words when discussing the pre-breakup period versus the post-breakup period. The present study only examined participants’ realizations about the impending breakup and memories of the breakup itself. There were no prompts to explore the relationship prior to the breakup period. This being the case, relational context is an important consideration that should be explored in future studies.

What’s more, it may be the case that the medium through which Interpersonal Decentering is assessed matters. If scoring mature perspective taking requires the structure provided by an EW paradigm, perhaps null results may be partially attributed to the oral nature of the SOC task. Indeed, some research posits that spoken and written language systems are fundamentally different from one another (Rapp, Fischer-Baum, & Miozzo, 2015); as such, Decentering scoring may be better suited for one modality over the other.

Baikie & Wilhelm (2005) suggest several mechanisms that may be responsible for the benefits seen after Expressive Writing. Confrontation of previously inhibited emotions might account for improvements both in physiological and psychological functioning. Additionally, there may be elements of exposure that are accounting for gains. Lastly, and perhaps most importantly, Expressive Writing requires a level of organization in order to develop narrative coherence, which is critical for the adaptation of more functional schemas in response to negative and/or upsetting events (Klein & Boals, 2010). This last component is notably different between EW and SOC narratives, and may play a more important role than previously realized.
Indeed, research on Interpersonal Decentering utilizing an EW paradigm following romantic breakups has yielded results suggesting that increased social cognitive maturity is related to increased use of cognitive/insight and emotion words in the subsequent transcriptions (Jenkins, Austin, & Boals, 2013). This would suggest that increased relational information processing may be at play, and that individuals with higher social cognitive maturity may enjoy greater understanding and less pain following a breakup. If relational information processing proves to be an important component of Interpersonal Decentering, writing may be a better medium through which to facilitate information processing and meaning making than oral disclosure.

Research suggests that the ability to psychologically distance oneself from upsetting experiences, rather than immersing oneself in them, leads to lower levels of depressed affect (Kross & Ayduk, 2008), and that distancing from destructive thoughts and behaviors is associated with increased recovery from Major Depressive Disorder (Fresco et al., 2007). Because psychological distancing is positively correlated with perspective taking (Joireman et al., 2002), we expected to see an inverse relationship between Interpersonal Decentering high and average scores and depressive symptomatology. Our data suggest that more mature perspective taking was inversely related to initial levels of depression, but for female participants only. One possible explanation for these gender differences is that men in the present sample were distinctly underrepresented relative to the number of female participants. In fact, the effect sizes between men and women were quite similar for this analysis; it is possible that their r’s differed in significance because the male portion of the sample was distinctly underpowered.

However, extant literature posits that women are more likely to engage in ruminative coping styles than their male counterparts (Nolen-Hoeksema, Larson, & Grayson, 1999), which
is typically associated with higher depressed affect than psychologically distanced reflection (Kross & Ayduk, 2008). It seems to be the case that those women that were able to channel and apply more mature perspective taking (increased psychological distance) when discussing their breakup consequently experienced lower levels of depressive symptomatology in the months following the separation.

Additionally, research suggests that women tend to both process and express emotion more frequently than men, and that emotional processing is more effective for women as well (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). Perhaps the increased attention on the emotions and internal processes of others and oneself that Decentering requires helps women to feel more resolved following a relational loss. Perhaps men are less inclined to gain solace from perspective taking-oriented skills, and instead may recover from depression or posttraumatic distress in other, less emotional, ways.

There was no association between highest level of Decentering and BDI scores for women. In some ways, average level of Decentering – or one’s inclination to Decenter highly with regularity – might be a more important mechanism in the regulation of depression following relational loss than Decentering highly for a moment in time. There was also no relationship between men’s or women’s tendency to Decenter highly and PTSD symptoms following the breakup. Perhaps common symptoms of depression (loss of pleasure, feelings of sadness and worthlessness) occur in a less automatic, more ruminative fashion than do common PSTD symptoms (intrusive thoughts, avoidance, and anxiety), which can arise very quickly and without warning. It may be the case that Decentering strategies are better suited for altering more pervasive and reflective cognitions, such as those that arise from depression, rather than for those that occur very quickly and are difficult to control, as is the case with PTSD.
Additionally, women in the present sample tended to be younger than their male counterparts, were negligibly more likely to have initiated the breakup, were more likely to have entered into a new relationship, and exhibited higher Decentering scores. Perhaps women, who are presumably more emotionally attuned than their male counterparts, exhibited greater interest in participating in a study of this nature at younger ages, were better able to recognize and extricate themselves from relational discord, and were more likely to seek out other relationships post-breakup. Again, these differences may partially explain null findings for males.

Initial depression and PTSD scores accounted for a significant level of variance in the follow up measures of each; individuals that were more highly depressed or distressed initially tended to remain more highly depressed or distressed at the Time 4 follow-up than their less affected counterparts. Feelings of responsibility for the breakup approached significance in their contribution to subsequent levels of PTSD symptomatology, and those who did not suggest or decide to breakup reported higher initial and subsequent IES scores. Feelings of trauma seem to be more prominent for individuals that felt a lack of control in the breakup process; this is consistent with other findings suggesting that increased distress in the wake of a breakup is related to feelings of control and desire to breakup (Frazier & Cook, 1993).

Individuals who persisted throughout the four monthly sessions tended to be older than those who were assigned to (and completed) the much more minimal pre-post group only. Perhaps older individuals have a more developed sense of responsibility and commitment that facilitated their effort to complete the study. Older individuals also tended to have exited longer relationships, which would arguably be more traumatic; however, they were also more likely to have initiated the breakup, which has previously been found to relate to lower levels of distress (Thompson & Spanier, 1983).
Participants who completed the study tended to have been in shorter relationships, had broken up more recently, and were more depressed initially than non-completers. Perhaps the emotionally rigorous nature of the study was too overwhelming for individuals who had separated from a relatively longer relationship. It is possible that these individuals may have had a greater propensity to take the perspective of their former partner, having been in a longer relationship. This differential attrition may be a partial explanation for null findings. A more recent breakup was associated with higher initial BDI scores; those who completed the study may have perceived their participation as therapeutic, and this may have encouraged commitment to completion. Indeed, simply participating in research studies pertaining to a romantic breakup can facilitate recovery after a relational loss (Larson & Sbarra, 2015).

Limitations and Strengths

There were some differences between the pre-post and monthly conditions, despite randomization. For instance, there were more individuals in the pre-post group that first suggested the breakup than in the monthly group, though initiator status, decision to breakup, and feelings of responsibility for the breakup did not appear to differ between the conditions. Individuals in the pre-post group also were more likely to have entered into another relationship since the breakup, relative to those in the monthly group. Participants in the monthly group, in contrast, reported significantly higher levels of PTSD symptoms initially than those assigned to the pre-post group. These differences in initial IES scores, despite attempts at randomization, may have obscured important findings related to Decentering.

There were a disproportionate number of females in the overall sample, as well as in each condition. Even so, the groups did not differ significantly from one another in gender composition, nor did attrition suggest any gender-related trends. Range and Jenkins (2010)
suggest that men may benefit more from experimental disclosure than women; if this is the case, the very small proportion of men in the present study may have been insufficient to detect potential gender related benefits.

The sample was also predominantly White, and findings may not generalize to all populations. What’s more, the pre-post group has a significantly higher proportion of White individuals than did the monthly group; this trend persisted for those individuals who completed the final visit as well. Overall, the groups appeared to have been successfully randomized on most other variables, which is a strength of the current study. The sample was recruited largely from a university population, despite efforts to attract participants from the larger community as well. As such, the results may not be generalizable to all young adults, particularly those from low socioeconomic, racial minority, or other underrepresented backgrounds.

Typical Interpersonal Decentering training standards call for Spearman’s rho > .80 for sufficient inter-rater reliability. In the present study, initial dyadic reliabilities were all unacceptably low, but for the reliabilities with the pair’s consensus, only one of the three pairs did not have at least one scorer who was reliable with the consensus above the .80 level for the highest Decentering score, and for the average score, each pair had one scorer who was reliable at that level. Though this is a major limitation of the present study, it is worth noting that this study is first of its kind to examine a SOC transcription, which, as aforementioned, was considerably more chaotic than typical narratives utilized in Decentering scoring. What’s more, the training modules with which new scorers learned the system involved EW essays or responses to TAT pictures, not SOC transcriptions; this may have exacerbated poor inter-rater reliability. Because of this, new conventions needed to be established continually through extensive discussion in the early phases of scoring to accommodate differences in the nature of
the prompts and responses generated by the SOC narratives. In examining the individual raters’ reliabilities, it becomes apparent that there was one scorer in particular with unacceptably low scores; most other raters were achieving reliabilities within the .60 to .90 range. Even so, consensus inter-rater reliability was acceptable (and significant) for the present study, but likely will be more so the next time it is employed.

Future Directions

In future replications, greater representation of both genders would provide more global information about perspective-taking and distress recovery in the general population. This may be difficult to encourage, however. Research suggests that women are both more inclined to use emotion in coping and able to use it effectively, as well as more strongly oriented toward dyadic relationships than their male counterparts (Baumeister & Sommer, 1997; Stanton, Danoff-Burg, Cameron, & Ellis, 1994). This being the case, it is possible that women may be more inclined to participate in a research study pertaining to loss of a romantic relationship than men in the first place. Perhaps more careful consideration of wording in recruitment materials may help to inspire and equal level of male and female interest in participation.

The findings suggest that women who decentered at higher levels initially also experienced lower initial levels of depression. Perhaps future studies could examine the effects of experimental interventions geared at teaching perspective taking skills to clients experiencing depression. Research of this nature could help to discern whether or not positive changes can be imparted in a clinical setting, and would be timely and relevant considering the prevalence of depressive disorders today.

Because the study sample was predominantly White, future studies should endeavor to include increased racial diversity, as well as consider examining ethnic differences in distress
recovery and perspective taking. This may be accomplished by pursuing collaborative research efforts between colleagues at multiple geographically distinct locations.

Perhaps findings (particularly related to PTSD symptomatology) may have been more pronounced in a more distressed sample, such as recent divorcees. Because breakups are such a common experience, and are regarded as such in young adulthood, it is possible that participants experienced diluted levels of PTSD symptoms. In a sample that has recently divorced, however, the resulting trauma symptoms, and need to employ recovery strategies (such as perspective taking) may be more pronounced. Broader inclusion criteria in regards to age and level of distress in the present study may have yielded important information, and is something worthy of exploration in future research endeavors.

Research by Jenkins, Dobbs, & Leeper (in press) has shown that individuals that are victims of interpersonal violence tend to decenter at higher levels than those that are perpetrators. This has important implications for the utility of Interpersonal Decentering as a coping mechanism and/or protective factor from future harm. Examination of whether or not this trend might persist when considering infidelity as the impetus for a breakup would be a contributive research endeavor. Infidelity was relatively common in this sample, and likely is for college-aged populations. Perhaps trends in Interpersonal Decentering capacity might emerge when examining victim and perpetrator patterns following a romantic breakup.

Applications of the Interpersonal Decentering scoring system have been utilized in studies with standardized Expressive Writing prompts, not approximations of experimental disclosure, as was the case in this experiment. It is possible that a relationship between mature perspective taking and posttraumatic distress following a relational loss may exist when subjects are prompted to speak using an actual Expressive Writing prompt, or even more likely, when
exposed to the actual Expressive Writing paradigm. In order to discern the psychological merit of oral versus written experimental disclosure, an experiment utilizing the same Expressive Writing prompts in both a speaking group and a writing group (in addition to a control condition), should be conducted. Moreover, the oral component should be examined through two different modalities: speaking to an actual experimenter versus speaking into a tape recorder. This way, clear information about the efficacy of each mode could be examined. What’s more, stringent adherence to the Expressive Writing prompt through which Interpersonal Decentering has been examined in previous research may yield more information about distress recovery following a relational loss.

Of course, it may be the case that initial levels of Decentering after a breakup are not the most important components of distress recovery. If social cognitive maturity is dynamic, perhaps it is the changes over time following a traumatic experience that predicts recovery. Perhaps attributions of breakup responsibility also change over time, with increased social cognitive maturity. These propositions may also help to explain why initial Decentering variables were not related to follow-up measures of depression and PTSD symptomatology. Future research should examine changes in Interpersonal Decentering longitudinally following relationship breakups.
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