

EMOTIONAL AND COGNITIVE COPING IN RELATIONSHIP DISSOLUTION

Elizabeth R. Wrape, B.A.

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APPROVED:

Sharon Rae Jenkins, Major Professor

Amy Murrell, Committee Member

Adriel Boals, Committee Member

Vicki Campbell, Chair of the Department of
Psychology

Mark Wardell, Dean of the Toulouse Graduate
School

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Romantic relationships are important for social development and can impact an individual's functioning both positively and negatively, especially when the relationship breaks up. Emotional and cognitive coping strategies including emotion approach coping, avoidance, and rumination and variable response to expressive writing intervention were examined in relation to post-dissolution distress. Undergraduate participants randomized into two groups completed measures of cognitive and emotional coping variables and global distress, with the experimental group completing a three-session expressive writing protocol. Writing samples were rated for processing mode, or the degree of vague general statements. Avoidance and rumination demonstrated significant cross-sectional associations with Time 1 distress controlling for demographics and characteristics of the former relationship. Gender moderated the relationship between rumination and distress. Using a matched sub-sample, the groups did not differ on emotional coping variables or distress. Results demonstrate the importance of examining emotional coping strategies in conjunction with relationship dissolution.

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EMOTIONAL AND COGNITIVE COPING IN RELATIONSHIP DISSOLUTION

Introduction

There is a large focus in psychological literature on the study of human reaction and coping strategies employed in response to a negative stressor in a person's life. Often, these events are traumatic experiences that leave lasting consequences on the person's emotional and sometimes physical health. Cognitive and emotional processing after a significant event is an important concept in the study of human behavior because a person's predisposed behavior to a negative event can sometimes precede a more negative outcome, such as psychopathological symptoms. Romantic relationship breakups are a somewhat ordinary, developmentally appropriate stressor for many people, but can nonetheless leave lasting distress or other negative outcomes.

Relationship Dissolution

Studies that examine relationship dissolution have typically emphasized characteristics of the relationship affecting the participants after its termination. For example, Field, Diego, Pelaez, Deeds, and Delgado (2009) found certain characteristics predicted significant distress after breaking up. People who felt rejected and betrayed, reported that it was sudden, had a shorter period of time between the study and the breakup, were not the initiators, and had not found a new relationship experienced the most distress. Passage of time as a predictor was again supported in a study where confusion of self and other was a significant predictor of distress after a relationship dissolution (Boelen & van den Hout, 2010). This distress abated when more time passed

or when the participant was involved in a new relationship which signified his or her moving on romantically.

Initiator of the breakup is an important factor in consideration of distress. Sprecher (1994) conducted a study in which both members of the relationship were consulted regarding their perceptions and emotional reactions surrounding the dissolution. Overall, ex-partners agreed on who initiated the breakup and the reasons surrounding it. Status as sole initiator again related to less distress. This could be due to the initiator's ability to process the changes that occurred before the breakup actually took place. The initiator can analyze the costs involved including network influence, dyadic adjustment, trust, and partner alternatives whereas the person "left" would not get a chance to process this ahead of time, leading to a need for forced emotional processing (Banks, Altendorf, Greene, & Cody, 1987). In further support of this, VanderDrift, Agnew, and Wilson (2009) found that one partner's contemplation of breaking up mediated the relationship between diminishing commitment and initiating the dissolution. Therefore, the thought process of the initiator should be much more comprehensive than the one of the person left behind, leading to increased time to contemplate his or her decision.

Several studies applied the investment model to romantic nonmarital relationships. The investment model is a derivation of the theory of interdependence, which examines why relationships succeed or fail as a function of couples' interactions, dependence upon one another, and ability to influence outcomes (Rusbult & Buunk, 1993). The investment model highlights two significant influences on commitment:

dependence and satisfaction level. In this way, relationships require a balancing act, where dependence will not necessarily indicate satisfaction and vice versa. Therefore, the degree to which a couple was committed will determine their relationship stability (VanderDrift, Agnew, & Wilson, 2009). A study examining on-again/off-again relationships illustrated that cyclical couples tend to emphasize negative relational aspects more than positive (Dailey, Pfiester, Jin, Beck, & Clark, 2009). Therefore, despite lower relational satisfaction, the couples reunite, which could be due to their commitment and dependency levels rather than being a function of actually being happy together.

Other studies have examined commitment in other contexts as well. In a longitudinal study, Fine and Sacher (1997) found that couples who at Time I had higher commitment level and lower perceptions of alternative relationships were more likely to experience significant distress after their breakup. Frazier and Cook (1993) further broke down the components of commitment, examining satisfaction, duration, closeness, and perceived alternatives as facets of commitment. More satisfaction, longer duration, perceived closeness, and less perceived alternatives pre-dissolution once again predicted distress. Helgeson (1994) found similar patterns to those just described in distress in marital dissolution, indicating moderately universal patterns if commitment level is high.

Gender differences in perceived distress following disengagement are an area of focus in dissolution literature. Findings are contradictory in this particular area. Sprecher (1994) found no significant difference between men's and women's experienced distress after a relationship breakup. This was in contrast to Hill, Rubin, and

Peplau's (1976) study of 103 breakups, in which they found men experienced more depression, loneliness, and guilt after disengagement. Helgeson (1994) studied long distance relationship dissolution, and found that men experienced more distress when the breakup occurred, which was especially acute in men who did not initiate the breakup. Several other studies found that women experienced more distress and negative emotion surrounding the situation (Field et al., 2009; Perilloux & Buss, 2008). Women were also found to be significantly more emotionally involved before the breakup occurred, and were more at risk for high distress afterward (Davis, Shaver, & Vernon, 2003). In contrast, other researchers found females who spent more time with their partners before the breakup had a shorter recovery period, as explained through their "more balanced" view of their relationships (Locker, McIntosh, Hackney; Wilson, & Wiegand, 2010). Findings for gender differences in dissolution are clearly contradictory, and need continued study to achieve better clarification.

As relevant to the inclusion criteria of this project, Kurdek (1998) found that as compared to heterosexual couples, gay and lesbian partners reported more autonomy and more frequent dissolutions. In a later study, however, he concluded that there were no significant differences in the experience of distress after relationship dissolution in gay or lesbian couples as compared to heterosexual couples (Kurdek, 1997). Therefore, both homosexual and heterosexual partnerships will be included in the present study.

According to the literature that examines relationship characteristics in relation to post-dissolution distress, commitment level, status as "dumper" or "dumpee," time since breakup, and perceived alternatives are important factors. A substantial amount of

research has been devoted to these demographics, with mostly use of self-report and Likert scales. This project endeavors to examine other factors above and beyond those already described that may lead to additional distress, with a main focus on coping and processing variables. Additionally, the participants were requested to describe in an open-ended format what their relationships and subsequent breakups have meant to their lives in order to develop a comprehensive picture of how the distress surrounding a relationship breakup can be so enduring.

Emotional Processing and Coping

Acceptance/reappraisal (two components of emotion-approach coping), avoidance, and rumination were included in a meta-analysis testing their dispositional relationship to psychopathology and stressful life events (Alado, Nolen-Hoeksema, Schweizer, 2010). These variables related to psychopathology in a varied manner, with avoidance and rumination strategies demonstrating larger effect sizes in association to various disorders. Contrary to the researcher's hypotheses, acceptance and reappraisal had small positive effect sizes in association with psychopathology, indicating that in some cases these strategies could be maladaptive. Overall, trait-like use of the aforementioned strategies related to higher instances of psychopathology and arguably should be maladaptive in situational stress as well (Alado, Nolen-Hoeksema, Schweizer). With the previously discussed research connecting stress and relationship dissolution not being sufficient for explaining the lasting distress found, it is believed that these additional emotional processing variables will play a role in how a person handles a life-

altering situation inherent in romantic breakups. The following sections will describe these coping variables in relation to one another and coping or processing as a whole.

Two paragraphs Ruminative thinking, as it is generally defined, is repetitive thinking.

Rumination has often been associated with depression and maladaptive outcomes (Nolen-Hoeksema, 1987). People who ruminate also may be inhibiting their own progress in life. It has been found that ruminative or preoccupied thought prevents undertaking actions related to problem solving due to unhelpful perseveration (Diefendorff, Hall, Lord, & Streat, 2000). Moberly and Watkins (2008) found trait rumination was associated with reporting more severe negative events and subsequent reactivity to them. This indicates that people who utilize depressive rumination often see life much more negatively, and thus react negatively to situations in a maladaptive manner.

Cultural similarities in use of rumination are present in the literature. In a comparative sample of US and Indian people, there were no significant differences found between rumination's function or frequency; rumination mediated the relationship between forgiveness and stress in both populations (Suchday, Friedberg, & Almeida, 2006). There are however, some differences in cultural utilization. Grossman and Kross (2010) studied Russians and Americans and found Russians experienced less distress after a negative event, which the authors hypothesized was due to their tendency to self-distance. Self-distancing, a construct often operationalized as opposite of rumination, was hypothesized as the source of the cultural difference in psychological health. Despite the slightly dissimilar strategies utilized across cultures, it does appear that rumination exists in some form in a fairly universal manner.

Supporting the variety of conceptualizations found in rumination, researchers have operationalized its function in many different models. Two theories are discussed in this literature review, the avoidance theory of worry, and the response styles theory. First, Borkovec, Ray, and Stöber (1998) originally proposed the avoidance theory of worry. It was adapted to include rumination as a cognitive strategy to evade traumatic circumstances (Watkins & Moulds, 2007). Worry and rumination appear closely related and are often discussed in conjunction (Stöber & Borkovec, 2002). However, where there is an overlap between the two constructs, researchers have asserted that worry and rumination contain unique content (Moulds, Kandris, Starr, & Wong, 2007; Watkins & Moulds, 2007; Williams and Moulds, 2007). These differences include time orientation, themes, and motives behind their uses (Nolen-Hoeksema, Wisco, & Lyubomirsky 2008).

The response styles theory of depression (RST) is arguably the most widely cited model including rumination. RST postulates that the duration, severity, and course of depression is determined through response to situations (Nolen-Hoeksema, 1987). A person facing a negative situation will have prolonged negative mood partly due to repetitive thought, which will inhibit their desire to commence action and problem solve. Despite RST's comprehensive explanation of depression, many researchers believe that the theory's measurement of rumination is not true and unadulterated. More specifically, it was asserted that there was contamination of the self-report measure, the Ruminative Responses Scale. Items on the scale were said to prime the participant with depressive content such as how often they think about how sad they feel, their shortcomings, failings, faults, and mistakes (Seegerstrom, Tsao, Alden, & Craske, 2000; Stanton, Danoff-

Burg, Cameron, & Ellis, 1994). Nolen-Hoeksema, Wisco, and Lyumbomirsky (2008) have since revised several aspects of the original theory, including the amendment that rumination predicts the onset, not the duration of depression, is predictive of more disorders than just depression, and that not all repetitive thinking is maladaptive.

In conjunction with creation of more construct-valid models, there has been work to tease apart the factors underlying the construct of rumination. As demonstrated through the Response Styles Questionnaire, Treynor, Gonzalez, and Nolen-Hoeksema (2003) found two distinctive factors in depressive rumination: brooding and reflection. Brooding is characterized as abstract and over-general with a “wish it was better” attitude whereas reflection is purposeful turning inward for problem solving. Cann et al. (2011) also assert that not all rumination has negative consequences, and that it is important to recognize the differences. These authors presented rumination as two different factors as well: intrusion and deliberation. Intrusion is undesired and repetitive much like brooding, and deliberate rumination is aimed at creating meaning behind the event itself. These separate theories of rumination both divide it into a depressive/intrusive factor that is maladaptive and a reflective/deliberate factor that will be more adaptive for the person in the long term.

In past research, rumination has demonstrated gender differences in frequency as well as outcome. It is a well established finding that women ruminate at a higher frequency than men do; many researchers assert this difference can account for the almost 2:1 ratio of depression diagnoses for women (Nolen-Hoeksema, 1987; Puterman, Delongis, & Pomaki, 2010; Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Watkins,

2008). This is a concerning finding, and could account for some of the disputed gender differences in distress experienced after relationship breakups.

For the purposes of this project, repetitive negative thinking (RNT) is emphasized but referred to as rumination. RNT involves the continual repetition of negative thoughts about a situation or the self (Ehring & Watkins, 2008). It has been shown to be a predictor and symptom of up to 13 different disorders (generalized anxiety disorder, depression, posttraumatic stress disorder, social phobia, obsessive-compulsive disorder, insomnia, eating disorders, for a few) and often exacerbates distress with overly generalized and unproductive characteristics (Ehring & Watkins). In addition, Moberly and Watkins (2006) demonstrated that the disposition to employ ruminative self-focus after a negative event actually increases the negative emotional reactivity experienced after other everyday stressors. With such pervasive and impactful consequences, RNT is a construct that should be understood in as many different contexts as possible.

Rumination within the realm of relationship dissolution does not appear to have been examined comprehensively. Puterman, Delongis, and Pomaki (2010) found that social support was a buffer between trait rumination and negative affect. This could be especially relevant in relationship dissolution, as a romantic relationship is often considered an important source of social support. Thereby, the loss of such a support could be especially distressing.

Go qvqj"cr rtqcej "eqrkpi 0" Emotion approach processing or coping has developed a “bad reputation” in previous coping literature (Austefeld & Stanton, 2004). However, Stanton, Danoff-Burg, Cameron, and Ellis (1994) argue for the construct of emotion

approach coping (EAC), asserting that its conceptualization has been confounded with poor construct measurement. Within past theories including the construct, both avoidant-oriented coping and approach-oriented coping were designated as a part of emotion focused coping despite being divergent concepts (Stanton, Sullivan, & Austenfeld, 2009). Often, this manifested as items coded as emotion-focused coping measuring distress instead. After Stanton and her colleague's efforts to partition items tapping into psychopathology from those examining emotional processing and expression, EAC has mainly been found to be an effective management strategy for significant stressors.

Approach-oriented coping uses experiential strategies such as understanding and acknowledgment, which can be beneficial to the processing of a stressor. Emotion approach coping has been found to be an effective coping strategy for breast cancer and chronic pain, as some examples (Stanton, et al., 2009). In contrast, avoidant-oriented coping such as denial or disengagement appears to be much more maladaptive (Baker & Berenbaum, 2008). Emotion approach coping has been conceptualized as having two dimensions: emotional processing and emotional expression. Processing is defined as coping through active attempts to acknowledge, explore meanings, and come to an understanding of one's emotion while expression is verbal or nonverbal attempts to communicate one's emotional experience (Austenfeld & Stanton, 2004). In addition, Baker and Berenbaum (2008) found that after an EAC intervention those who had difficulty describing emotion demonstrated less negative affect.

Gender differences have been found in frequency and type of coping strategies employed. Stanton, Kirk, Cameron, & Danoff-Burg (2000) found that women reported

significantly more coping through emotional processing, emotional expression, distress-contaminated coping (distress or self-deprecatory content), and seeking social support. Men, however, reported more drug and alcohol disengagement. In support of this, a study including participants with anxiety disorder found that women utilized EAC significantly more often than men (Marques et al., 2009).

However, there are still contradictory findings regarding emotion approach coping's connection to psychopathology. For example, in a study of trauma-exposed participants, EAC was positively related to increased symptoms of PTSD (Amstadter & Vernon, 2008). Feldman, Harley, Kerrigan, Jacobo, and Fava (2009) proposed that examination of emotions is beneficial only if it is undertaken in a "skillful manner." More specifically, EAC has a connection to depressive rumination if emotional processing gives way to brooding and negative thought. In his review of repetitive negative thought, Watkins (2008) stated that emotional processing has been associated with constructive and unconstructive outcomes. Feldman and colleagues suggest that with proper training as a component of many contemporary therapeutic theories, emotion approach coping will have positive outcomes. Accomplished correctly, emotion approach coping should be an examination and expression of feelings, a process which rumination disrupts.

Emotion approach coping does not appear to have been studied yet in relation to relationship dissolution. Due to the contradictory evidence in the literature as to the nature of outcomes, this population will be a useful contribution. Its measurement has been successful in both dispositional and situational contexts, and thus should easily map

onto the situational aspect of dissolution (Stanton, Sullivan & Austenfeld, 2009). EAC's relatively recent re-conceptualization can contribute greatly to the understanding of individuals' mindsets when they choose to process and express their emotions, in contrast to rumination and avoidance strategies which upset the coping process.

Cxqkf cpeg0' Avoidance is characterized as strategies to escape or avoid painful feelings or situations, often in order to avoid situational and contextual reminders of events (Moulds, Kandris, Starr, & Wong, 2007). Most often avoidance is studied in relation to anxiety, but has also been studied as a construct present in depression when controlling for anxiety and rumination (Ottenbreit & Dobson, 2004). Avoidance in general has been negatively correlated with habituation and the ability to employ more adaptive strategies. This is due to the nature of avoiding negative emotions or feelings about the stressor indicating a person's complete failure to cope (Aldao, Nolen-Hoeksema, & Schweizer, 2010).

Numerous theories have integrated avoidance into their processing models, with the majority identifying it as a maladaptive strategy. Several subsets of avoidance have been identified within this literature. Moos and Schaefer (1993) operationalized two factors of avoidance, which include cognitive-avoidance and behavioral-avoidance. More recent literature has also discussed experiential avoidance, which will be discussed but not examined specifically with this population.

Cognitive avoidance includes strategies pertaining to evasion of mental processing such as thought suppression and distraction. It has been related to excessive worry and generalized anxiety disorder (Sexton & Dugas, 2008). Blalock & Joiner

(2000) found that cognitive avoidance had a moderating relationship between negative life events and depressive symptoms. In another model, cognitive-processing theory hypothesizes the benefits of reframing a negative event to find insight, a course which avoidance techniques actively disrupt (Frattaroli, 2006). If such techniques are utilized, discrepancy between cognitive schemas and the thoughts surrounding the negative affect can continue the cycle of avoidance, which studies have shown ultimately may lead to depression, intrusive thoughts, and even physical health deficits (Lepore & Greenberg, 2002). Overall, cognitive avoidance is characterized as maladaptive and several third wave therapies have begun targeting it in order to reduce these symptoms (Sexton & Dugas).

Behavioral avoidance includes any actions seeking to avoid reminders or negative feelings regarding a stressful situation. These include venting emotions unproductively, using drugs, alcohol, or binge eating, seeking out distraction but not support, and even inaction (Moos & Schaefer, 1993). Both depression and anxiety have been associated with behavioral avoidance (Ottenbreit & Dobson, 2004). Furthermore, when anxiety is controlled for, behavioral avoidance and rumination were correlated, indicating that despite efforts to control the situation, people often excessively think about it (Moulds, Kandris, Starr, & Wong, 2007). Behavioral activation therapy (BA) is one treatment with the objective to counter depressive symptoms, including behavioral avoidance. It attempts to “reengage people with their lives” using positive reinforcement, effectively ending behavioral avoidance as a strategy (Jacobson, Martell, & Dimidjian, 2001).

The final category of avoidance discussed in coping literature is experiential avoidance. A central piece to acceptance and commitment therapy (ACT), experiential avoidance is operationalized as a person's attempt to avoid certain bodily sensations, memories, and negative emotions through alteration of the context related to them (Hayes & Wilson, 1994). Through mindfulness and acceptance techniques, a therapist works with a client in order to place them back into touch with their own emotions and memories (Hayes et al., 2004). Experiential avoidance may subsume both behavioral and cognitive avoidance. It is hypothesized that it plays a large part in the conceptualization of processing mode or reduced concreteness, to be discussed in a subsequent section (Cribb, Moulds, & Carter, 2006).

Many researchers assert that rumination and avoidance are overlapping constructs, with depressive rumination being a sort of avoidance strategy (Cribb, Moulds, & Carter, 2006; Moulds, Kandris, Starr, & Wong, 2007). With the focus on the over-general and negative, one cannot focus on the details and definite meaning behind events and thereby avoid the resolution or problem itself (Ottenbreit & Dodsens, 2004). Though the constructs are different than social withdrawal, they serve the same function, in essence removing the person from the realistic situation. Both avoidance and rumination are characterized as defense mechanisms, with over-general memory contributing to both (Williams et al., 2007).

Avoidance as a general construct is very applicable to relationship dissolution. Chung et al. (2003) found that after relationship breakups, participants displayed as much avoidance as a clinical comparison sample. Additionally, Lepore and Greenberg (2002)

found that avoidance strategies after breakups were related to short-term increase in upper respiratory symptoms in a control group. Self-complexity, or a person's perception of his or her roles and the way those roles interplay has also been studied in relation to avoidance. In a breakup, a person can lose pieces of his or her own self-concept when a relationship ends, reducing their self-complexity. This has been associated with more use of avoidance strategies (Smith & Cohen, 1993). Therefore, it is essential to understand the concept of avoidance in relation to relationship dissolution, as it is a widely evoked strategy in coping. This thesis emphasizes behavioral and cognitive avoidance, with the topic of experiential avoidance coinciding with the concept of processing mode.

Rt qeguukpi 'o qf gO' Processing-mode theory refers to the idea that there are a number of distinct modes of self-focused attention to moods and problems, each of which has distinct functional properties (Watkins, 2004). The two primary modes discussed are abstract/evaluative/conceptual and concrete/analytical/experiential. For the purposes of this discussion, the terms abstract and concrete is used. Watkins (2008) has operationalized the abstract processing mode as having decontextualized meanings that convey the meaning, or "gist," of a situation with a focus on desirable but not necessarily realistic outcomes. An example is, "I always find it hard to get along with people" (Watkins & Moulds, 2007). In contrast, a concrete mode contains mental representations that include contextually specific and incidental details of events and actions with consideration of the feasible and the attainable. For example, "I was rude to my friend John yesterday evening" is unambiguous. Contextually specific details include specific

feelings, dialogue, or senses regarding a situation. Outcomes in studies examining processing mode have been fairly consistent in defining an abstract mode of processing as a maladaptive tendency due to its over-general nature.

One possible contributing factor to the connection between the abstract processing mode and maladaptive outcomes could be related to the overgeneral memory phenomenon. It has been studied in relation to poor psychological health and disorders such as depression and post-traumatic stress disorder (Williams et al., 2007).

Overgeneral memory refers to the inability to recall specific events when solicited. Instead, a person focuses on a broad-spectrum statement or repeated event (I walk my dog everyday). This has been characterized as a vulnerability marker for depression. Raes, Watkins, Williams, & Hermans (2008) examined overgeneral memory in relation to processing mode, and found that when a concrete, nonruminative condition was induced, overgeneral autobiographical memory instances decreased. The authors postulated that the abstract processing mode is an underlying cause for the overgeneral memory often found in depression and PTSD.

The mode of processing inherent in rumination is abstract and evaluative, in opposition to a concrete, process-focused thinking style. Watkins, Moberly, & Moulds (2008) trained participants into either a concrete or abstract mode of processing and exposed them to a failure experience. For participants trained into the abstract mode of processing, there was a focus on the overall meaning behind the event and the unproductive “why” type questions, which predicted negative affect and further rumination. In contrast, those in the concrete condition focused on the minute-to-minute

experience of feelings in a more specific, less general way and demonstrated less emotional reactivity. Other studies have found over-general memory and intrusive thoughts or memories related to stressors was reduced in a concrete condition (Raes, Watkins, Williams, & Hermans 2008; Williams & Moulds, 2007). Cribb, Moulds, & Carter (2006) found that participants who wrote in a less concrete style following a dysphoria-evoking film also tended to ruminate and avoid negative feelings related to the film.

In addition to associations with rumination, some researchers characterize reduced concreteness as a type of functional avoidance. It is easier for people avoidantly coping to think of the overarching concept rather than details, especially if the details involve a negative or traumatic event (Williams et al., 2007). Hermans, Defranc, Raes, Williams, and Eelen (2005) found nonspecific, overgeneral autobiographical memory was associated with increased levels of experiential, cognitive, and behavioral avoidance. Supporting this, mindfulness based therapies such as ACT contain specific exercises to assist the client to recreate and re-experience certain memories in a more specific manner. The “observer exercise” asks the client to remember an event and become intensely aware of characteristics of that memory including bodily sensations, smells in the room, and thoughts attached to moments (Hayes, 2004). This therapeutic technique elicits a concrete processing mode, in an attempt to eradicate a client’s ability to overgeneralize or avoid emotions for that event.

Many of the studies identifying processing mode in relation to emotion processing have utilized a training method to induce a specific type of style rather than assessing the

one natural to the participant. Moberly and Watkins (2006) as well as Watkins (2004) used a writing task in order to stimulate the level of concreteness desired in each of the conditions before inducing a failure and assessing a reaction. Assessing a participant's spontaneous processing mode could be an important illustration of their coping strategies and overall state of mind. Stöber, Tepperwien, and Staak (2000) originally created the concreteness scale to measure problem elaborations, or problem antecedents and negative consequences. Participants wrote three sentences for each of these two categories and then were rated for their concreteness. In a similar procedure, Stöber and Borkovec (2002) asked participants to write down two of their major worries and three potential negative consequences which were again rated for concreteness. These prior uses of the concreteness scoring system were very controlled and the instruction were exact.

In the realm of relationship breakups, a person's description of the relationship and the subsequent breakup could demonstrate less concreteness, indicating that they are coping in an abstract manner. With avoidance and rumination as theorized underpinnings for reduced concreteness, measuring the processing mode of a participant can contribute to a comprehensive picture of their memories surrounding the dissolution. Ultimately, this can help answer whether the reduced concreteness and overgeneral memory present in processing mode are actually predictive of distress.

Expressive Writing

Expressive writing has produced a multitude of studies investigating its effectiveness on different populations, benefits, and theories regarding its utilization. In a meta-analysis of expressive writing literature, Frattaroli (2006) found a positive and

significant effect for experimental disclosure on physiological and psychological health. Romantic relationships were used as context for several studies testing the effect of expressive writing. Slatcher and Pennebaker (2006) asked one member of a romantic pair to write for three consecutive days. They found that those who took part in the expressive writing task were significantly more likely to be dating their romantic partner three months later in comparison to a control group. Lepore and Greenberg (2002) found that physiological symptoms decreased for the experimental group asked to write about a relationship breakup. In addition, this study found a trend that expressive writing participants were more likely to reunite with their ex-partner than those who were in the control condition.

A great deal of the research in expressive writing has used the writing task as a procedure without using the writing content itself as a measure. Bornstein (2010) suggests a more multimodal approach in order to understand the full implications of expressive writing. This is important in order to understand not only how much distress the ex-partner is experiencing, but also important characteristics regarding the relationship itself and the emotional processing involved in the dissolution.

In her meta-analysis of the Expressive Writing Paradigm, Frattaroli (2006) examined important methodological and treatment variables in attaining a significant effect. These include number of writing sessions, time spent writing in session, the inclusion of a control group for comparison, and timing for the follow-up period. More specifically, the analysis suggested more than one writing session, fifteen or more minutes per session, use of a control group, and a follow up period of a month or less.

This project followed her recommendations in order to achieve a balance of practicality and power. Therefore, two writing sessions for 15-20 minutes, a control group writing about everyday life, and a three week follow up period should show a sufficient effect mirroring previous findings.

Cognitive and emotional word usage shows strong predictors for different processing variables such as grief and avoidance when dealing with the stressor of a relationship breakup (Boals & Klein, 2005). Romero (2008) found that expressive writing participants asked to write about an interpersonal offense and empathize with the offender actually reported more forgiveness and lower levels of avoidance. Lepore and Greenberg (2002) noted a non-significant, but promising pattern of the effectiveness of expressive writing on those experiencing avoidance or intrusive thoughts. Repetitive thoughts and avoidant coping being two constructs of interest in this project, this prior research lays ground work for positive outcomes using the expressive writing paradigm with relationship dissolution.

In addition to the desired outcomes for the emotional and cognitive coping variables, the content of the writing itself is an important and arguably understudied component of the process. For this reason, it is hypothesized that the content will serve as a proxy for the process mode with which the participants view their relationship, breakup, and subsequent emotional coping.

Present Study

This study examined the emotional and cognitive processing variables of emotion approach coping (processing and expression), avoidance, rumination, and processing

mode in relation to relationship dissolutions. These variables had not been examined comprehensively with breakups in undergraduate populations and could be an important contribution to dissolution research. In addition, the collection of participant relationship characteristics such as time passage since breakup, commitment level, initiator of breakup, length of relationship, and perceived alternatives could be helpful to support or refute contradictory past literature.

The measurement of a person's spontaneously used processing mode in expressive writing contributes to the overall view of a person's adjustment after relationship dissolution. It was hoped that the processing mode would play a role in the emotional and cognitive coping variables examined and discussed previously. More specifically, emotion approach coping, avoidance, and rumination should be components of the processing that is inherent in each person above and beyond the characteristics of the former relationships. The measures administered and the content in the expressive writing task served as a snapshot of a person's situational stress and subsequent coping strategies.

Examining past literature, cognitive and emotional coping strategies intersect and interplay with one another, influencing outcomes. Emotion approach coping, avoidance, rumination, and processing mode contain dimensions with both maladaptive and adaptive outcomes. For example, the construct of avoidance subsumes behavioral, cognitive, and experiential strategies, with rumination and reduced concreteness being hypothesized mechanisms through which avoidance is maintained. This is in contrast to the conceptualization of emotion approach coping, which in the absence of rumination

should provide relief of psychological distress for those undergoing stress. Because the transdiagnostic nature of these constructs spans many disorders, this project measured distress without an attempt to pinpoint specific disorders or outcomes. Therefore, it was valuable to examine all of these constructs in relation to one another with an empirically supported intervention such as expressive writing to measure outcomes.

The importance of studying a sample of the recently broken up is apparent through the continual discovery of long-lasting and pervasive distress that relationship dissolution can create. Romantic relationships prior to marriage are considered an important social development in some cultures; thereby it is important that this “everyday” source of stress be understood more fully. With more information as to the types of strategies and emotional processing that those who have broken up utilize, there could be more awareness as to the ramifications of the maladaptive and unhelpful processing that can occur.

After reviewing and integrating past research in emotional and cognitive coping as well as in relationship dissolution, these hypotheses were tested:

1. A less approach-oriented style, more cognitive and behavioral avoidance, and more depressive rumination will predict initial distress significantly above and beyond the former relationship’s characteristics.
2. Expressive writing about the relationship dissolution will provide reduction of overall distress, and increase positive outcomes in the other coping variables.

3. Processing mode may be an important mediator or moderator of the association between the emotional coping variables and perceived distress in relationship dissolution.
4. There may be gender differences involved in the experience of relationship dissolution as well as in the emotional and cognitive coping constructs.

Method

Participants

One hundred thirty-two participants who met inclusion criteria (breakup in the last six months with the relationship being at least two months in duration) completed the initial session; 113 completed the entire protocol. Two cases were trimmed due to influential outlying data (significantly higher age and distress level). Participants were provided with therapy referrals in the informed consent form. Overall, 132 participants (88 women) were used in the cross-sectional analyses. Age ranged from 18-27 ($M=19.89$). Year in undergraduate education was not excessively disproportionate with 34.1% freshmen, 28.8% sophomores, 20.5% juniors, and 16.7% seniors and fifth years. Participant race/ethnicity was fairly diverse with 46.2% Caucasian, 21.2% African American, 19.7% Latino, 8.3% Asian, and 4.5% reporting other races/ethnicities.

Procedure

Participants were recruited through online collection of data (SONA) and were compensated with credit for an undergraduate psychology course. On average, students received four credits for completing the entire protocol. Recruitment on SONA specifically stated that participants must not be married (or formerly married), must have

experienced a dissolution in the past six months, and have been in a relationship for at least two months. Because this study was designed to recruit participants without the danger of a floor effect for distress, a two month relationship was classified as serious enough in commitment and length that distress would be significant when it ended. Many past studies have not set these limitations and have often attained an average relationship length of eight months to one year. Frattaroli (2006) found the effect of expressive writing was stronger when the stressor was more recent. Thus, six months is a balance between event recency and practicality of recruiting participants. It was hoped that these exclusion criteria would increase the power of the findings in order to avoid participant reports that are overly retrospective or diluted.

Participants were asked to use the SONA system to sign up for time slots to complete their sessions in a computer lab. When the participant's time slot occurred, he or she was asked to fill out demographic measures and information about their relationships and the subsequent breakups using the Lime Survey platform. Each participant was provided with a study ID number that served as identification for each wave. The participants were instructed to complete the survey about his or her most serious, most recent relationship.

Each participant was randomly assigned to an experimental or control group. The survey was designed to prohibit skipping items in order to prevent missing data. Directly following the demographics section, participants in the experimental group were asked to expressively write for 15-20 minutes about the breakup itself. The free response space contained a timer to ensure the respondents were writing for a sufficient amount of time

as defined by Pennebaker's expressive writing paradigm. The directions for the experimental group were as follows:

In the space below, please describe the relationship and the subsequent breakup to which you referred in the previous questionnaires. I would like for you to really let go and write about your deepest thoughts and feelings about the relationship. You may write about things you did together, events that happened to you, how the relationship affected your life, and/or explore your emotions about the relationship and the breakup. No one other than the researchers involved in this project will have access to your writing. You will have 15-20 minutes to write, do not worry about spelling or grammar.

Control group participants were asked to write about daily events without integrating his or her thoughts or feelings regarding them:

In the space below, please describe the events of the past 24 hours, just as you might do in a diary. You may write about things you did or events that happened to you. Your description should be factual and detail-oriented, but do not write about your thoughts and feelings about the day's events, just the events themselves. No one other than the researchers involved in this project will have access to your writing. You will have 15-20 minutes to write, do not worry about spelling or grammar.

After the 15-20 minute period, participants in both groups filled out measures of emotion approach coping, rumination, avoidance, and distress.

Participants in the experimental group were contacted via e-mail prior to the first session to sign up for an additional writing session where the 15-20 minute writing task was repeated. Previous studies have found no evidence to warrant identical replication of experimental group methodology; therefore the control group wrote only once in the initial session (Harris, 2006). Both groups completed identical final sessions approximately three weeks (19-24 day range) from the initial survey administration. The participants filled out the same measures of emotion approach coping, rumination, avoidance, and distress as in Session 1. Participants in both groups were asked whether

they had initiated a new relationship, reunited with the former partner, or experienced positive or negative life events. They were then instructed to rate the stressfulness of any endorsed events.

Any participants that did not attend his or her scheduled appointment and did not give notice were given a chance to reschedule via e-mail. If he or she did not respond within a week's time or rescheduled and did not attend that appointment, he or she was marked as an "unexcused no-show" in the SONA system. Because of these types of cancellations, 134 participants provided time one data and 113 participants provided follow up data. Excluding those trimmed for outliers, this is a 17.7% attrition rate for the overall study.

Measures

Tgrv vkppuj kr 'f go qi t crj keu Items included length of relationship, amount of time since breakup, initiator of the breakup in the couple, perceived reason for breakup, availability of perceived alternatives, current relationship status and commitment level. These demographics were administered in the first session, with the follow up only containing a question as to their current relationship status and presence of any positive or negative life events since the first administration.

Gzrt guukxg'y tkkpi O' Using Pennebaker's expressive writing task, content from the participant's Time 1 writing was analyzed in order to determine his or her processing mode using a continuous measure of the dimension from concrete to abstract (see appendix for scoring manual). Two raters taught with training materials and unaware of the hypotheses of the project read over each Time 1 experimental writing independently

and rated the content on its level of concreteness on a 5-point scale (1- *abstract, or indistinct, cross-situational, equivocal, unclear, aggregated, 5-concrete, or distinct, situationally specific, unequivocal, clear, singular*) (Stöber, Tepperwien, & Staak, 2000). Writings were analyzed sentence by sentence with discrepant scores being reconciled by discussion. Consensus scores were averaged for each essay in order to provide an aggregate rating. Past studies found excellent interrater reliability (ICC = 0.97) for studies of student samples (Stöber & Borkovec, 2002; Watkins & Moulds, 2007). This scoring system had an interrater reliability of 0.86.

Go qvkpcrl'eqr kpi 'c'pf 'f km' gu' b' gcu' mt' gu' Ø' The following are self-report measures administered to participants to measure emotional coping strategies and distress.

Go qvk'p'Cr r tqcej 'Eqr kpi 'U'ecrgu'(EAC, Stanton, Kirk, Cameron, & Danoff-Burg, 2000). This measure of emotion approach coping contains two scales, Emotional Processing and Emotional Expression. Overall, the two scales contain 8 items that can evaluate the extent to which a person focuses on their emotions in order to cope. On a four-point scale respondents answered how often they utilize a certain strategy (1- *I usually don't do this at all, 4- I usually do this a lot*). Example items include, “I acknowledge my emotions” (Emotional Processing) and “I take time to express my emotions” (Emotional Expression). Maximum score on each scale is 16. Cronbach’s alpha in a past undergraduate sample was 0.91 for both scales, and it attained good test-retest reliability and overall validity (Stanton, Kirk, Cameron, & Danoff-Burg, 2000). Both scales were used in this project. Cronbach’s alpha for this sample was 0.81 for Emotional Processing and 0.88 for Emotional Expression.

Vj g'K r cev'qh'Gxgpw'Uecrg/'Cxqkf cpeg'Uecrg'(IES, Horowitz, Wilner, & Alvarez, 1979). The IES includes two scales: intrusive thoughts and avoidance. Both subscales were collected in this project, but only the Avoidance subscale was utilized in analyses. The Avoidance subscale consists of eight items measuring both behavioral and cognitive avoidance. The specific event (breakup) was specified at the beginning of administration, measuring the avoidant reaction to the romantic relationship breakup itself. The measure response scale contains four points (1 - *Not at All*, 2 - *Rarely*, 3 - *Sometimes*, 4 - *Often*). Maximum score on the Avoidance subscale is 32. The IES has been used in several studies relating to distress and relationship breakups (Boals & Klein, 2005; Smith & Cohen, 1993). Horowitz reported the internal consistency to be 0.82 for the Avoidance subscale. In a past undergraduate sample, Lepore & Greenberg (2002) reported Cronbach's alpha as 0.90. The internal consistency in this sample was 0.86 (Cronbach's alpha).

Vj g'Rgtugxgtc'xg'Vj kpnkpi 'S wgu'kppc'ktg (PTQ, Ehring et al., 2011). The PTQ measures rumination, or repetitive negative thinking (RNT) in 15-items with disorder-independent content. Factor analytic structure found an overall general measure of RNT, with three lower-order factors: core characteristics of rumination (repetitiveness, intrusiveness, and difficulties to disengage), unproductiveness of rumination, and rumination captured mental capacity. For this project, only the higher-order score of overall rumination was analyzed. Directions for the questionnaire were modified for this project, with “negative experiences or problems” being replaced with “your breakup.” This was intended to measure the state rumination surrounding the dissolution without

the confounding components related to depressive mood found in many other repetitive thought inventories. Items include “The same thoughts keep going through my mind” and “I feel driven to continue dwelling on the same issue.” Participants answer on a five-point scale for the extent to which the item applies to them (0 - *never*, 4 - *almost always*). Maximum score on this measure is 75. Internal consistency for the overall scale was found to be excellent (0.94) in an undergraduate sample with both convergent (other measures of rumination including the Response Styles Questionnaire) and predictive validity upheld. This sample yielded a Cronbach’s alpha of 0.96.

Vj g"J qr nku"U{o r vqo 'Ej gemkv'(HSCL-58, Derogatis, 1974). This widely used measure is an assessment of general distress in outpatient samples. Using 58-items, subscales include somatization, obsessive-compulsivity, interpersonal sensitivity, depression, and anxiety. These subscales tap into a variety of symptoms as well as global distress, and have been shown to be reliable and valid in many populations including undergraduates. The scale of overall distress was used in the analyses. Item responses were on a four-point scale (1 - *Not At All*, 2 - *A Little Bit*, 3- *Quite a Bit*, 4 -*Extremely*). Scores on this measure range from 58-232. Cronbach’s alpha was reported from 0.82-0.90 (Yuan, Guarnaccia, & Hayslip, 2003). Reliability in this sample was 0.97 for the overall measure.

Data Analysis Plan

Data Cleaning

The data were screened, cleaned, and examined for missing data and outliers. The outliers were checked for their source (for instance, illogical participant data entry) and

fixed if possible (altered to reflect a true score). Influence analysis was conducted on the outliers to see how far they fell outside the range of the other data and if they had undue influence on the analysis. If the data point highly influenced the findings (e.g. the studentized deleted residual (sdresid) exceeded 2) the case was eliminated.

Descriptive Analyses

Descriptive statistics including means, standard deviations, and gender and race/ethnicity break downs were obtained (see Participants section and Table 1). Additionally, means and standard deviations for the variables “Time Since Breakup” and “Length of Relationship” were calculated (see Table 2). Inter-rater reliability for the processing mode analysis as well as internal consistency reliability for all measures administered were obtained.

Correlation matrices were constructed with T1 variables including demographics with the coping variables, relationship characteristics, and distress and among the coping variables and distress. If demographics were correlated with the independent variables, that characteristic was controlled for in the analyses.

Next, the assumptions of regression were tested including normality, linearity, homoscedasticity, and collinearity. Relationship demographics such as the length of relationship, time since breakup, initiator status, perceived alternatives, and level of commitment were examined in association with distress using Multiple Regression. Beta coefficients and squared semi-partial correlations will be evaluated. These will be used to draw comparisons with past literature regarding relationship dissolution.

Hypothesis Tests

The first hypothesis is that a less approach-oriented style as measured by the Emotion Approach Coping Scales, more depressive rumination as measured by the Perseverative Thinking Questionnaire, and more cognitive and behavioral avoidance as measured by the Impact of Events Scale-Avoidance Subscale would be associated with distress as measured by the HSCL-58 (T1 measures). The data for this hypothesis were analyzed using hierarchical regression. Age and gender were entered in the first block with relationship demographics (commitment level, time since breakup, initiator status, and length of relationship) entered as the second block in order to control for those variables. This was due to previous literature's citation of these variables as correlated to the dependent variable, distress. The third block contained scores for level of emotion approach coping, rumination, avoidance, and processing mode. The dependent variable in the hierarchical regression was Time 1 distress as measured by the HSCL. VIF and tolerance levels were evaluated to ensure collinearity was not problematic for interpretation. The beta values and significance levels were examined to determine the unique variance each factor contributed. In this way the analysis would assist in answering the question of how much each cognitive and emotional coping variable contributed to a person's distress after a breakup, controlling for other predictors, demographics, and the characteristics of the former relationship.

The second hypothesis was that expressive writing about the relationship dissolution would provide reduction of overall distress over time and increase positive outcome in the other coping variables (more emotion approach coping, less depressive

rumination, less cognitive and behavioral avoidance). This was examined using a between-within ANCOVA in general linear modeling (GLM). Covariates were determined based on bivariate statistic matrices. Statistically significant correlations indicated the need to control for certain variables. Initial experimental and control group distress and cognitive and emotional coping levels were compared as well as change from T1 to T2. This measured the effectiveness of the expressive writing task for each of the variables in comparison to a control group.

The third hypothesis examined mediation and moderation using processing mode and T1 measures of emotion coping variables. Processing mode was hypothesized to be an important mediator or moderator to the experience of distress in relationship dissolution. Processing mode was used in both mediator and moderator models between each cognitive and emotional variable and T1 distress. It was hypothesized that processing mode would be impactful on the relationship between the coping variables and distress. These models were examined using the Baron and Kenny (1986) methods for analyses of mediation and moderation, described in the following section.

Mediation was tested using each coping variable as the initial variable and T1 distress as the outcome. The relationship between these variables was tested initially for a significant correlation (total effect), and then afterwards with the inclusion of the mediating variable (processing mode). After the total effect relationship was tested, the relationship between the initial variable and the mediating variable was tested, and similarly between the mediating variable and the outcome controlling for the initial variable. Finally, the relationship between the initial variable and the outcome was tested

again, controlling for the mediating variable (direct effect). If the correlation between the initial and outcome variables was weakened (not significant) or no longer existing, it indicated mediation.

Moderation was tested assuming that the coping variables were predictive of distress, and that gender and/or processing mode would alter the strength of that prediction. This was accomplished through use of hierarchical regression. The interaction of the causal variable (coping variables) and the moderator (processing mode or gender) on the outcome variable (T1 distress) was examined. Block one contained the coping variable and either processing mode or gender and block two contained the interaction of the two terms. The additional variance accounted for by the second block will be evaluated for change (the R^2 change is significant). If the relationship between the coping variable and distress was altered (strengthened or weakened) with the inclusion of the interaction, it indicated moderation.

The fourth and final hypothesis was that there were gender differences in the experience of relationship dissolution as well as in the emotional and cognitive coping constructs. These analyses determined whether gender moderated the relationship between the emotional processing variables (EAC, avoidance, rumination) and the level of distress experienced after a breakup. The same process described above was used to determine moderator presence.

Results

Attrition Analysis

Though the attrition percentage of 17.7% was considered acceptable, attrition analyses were conducted in order to check for systematic drop out on certain variables. Chi-square tests were completed with presence or absence of T2 data and intervention group (experimental or control), gender, race/ethnicity, infidelity, attainment of new relationship at T1, and endorsement of a major life stressor. The race/ethnicity variable was recoded in order to appropriately handle disproportionate numbers. Independent sample t-tests were conducted with the continuous variables including age, length of relationship, time since breakup, initiator status, participant commitment, former partner commitment, perceived alternatives, and the emotional coping variables (emotional processing, emotional expression, avoidance, and rumination) and distress. Variables significantly associated with dropout included length of relationship [$t(130) = 2.08, p < .04$] and participant commitment [$t(130) = 2.06, p < .04$]. Examination of means indicated that participants who dropped had longer relationships and rated themselves as more committed to their former partners.

Due to the experimental nature of the expressive writing intervention, it was important to examine attrition status based on intervention group in addition to overall characteristics. Logistic regressions were conducted with inclusion of group (experimental or control) and the variable of interest as independent variables and dropout status as the dependent variable. All previously non-significant variables remained non-significant. Against a constant only model, participant commitment [$\chi^2 =$

4.33, $p < .04$] and length of relationship [$\chi^2 = 3.37, p < .07$] independently demonstrated at least marginal significance, but inclusion of the assigned group did not affect the likelihood of dropout in either model ($p < .17$ and $p < .10$, respectively).

Randomization Check

One hundred eleven participants completed all phases of the protocol (74 women). In order to check the success of randomization, tests were conducted to examine the differences between the experimental and control groups. Chi-square tests were non-significant for race/ethnicity, gender, infidelity, experience of a major life event during the course of the study, same sex relationship, and initiation of a new relationship at T1 or T2. However, there was a significant difference between groups in reunion with former partner at T2, with the control group reuniting significantly more [$\chi^2(1, N = 111) = 3.88, p = .05$]. In order to examine group differences on continuous variables, t-tests were conducted for age, length of relationship, time since breakup, initiator status, commitment, and perception of available alternative partners. Time since breakup contained the only significant difference [$F(1, 109) = 3.06, p < .01$]. Examination of mean plots showed the control group had significantly less time between the beginning of the study and the breakup event (M control = 13.24; M experimental = 22.58). Independent samples t-tests were conducted to check for group differences on emotional coping variables at T1. Distress [$t(109) = 2.33, p < .02$] contained significant group differences (see Table 1). Data was re-checked for influential outliers on affected variables without success. In an attempt to correct for the failure of randomization to equate groups, participants were matched primarily on time since breakup and secondarily on T1 distress. To the

extent possible, they were further matched on gender and ethnicity. Matching yielded 74 participants, 37 each in the experimental and control groups; 37 people in total were trimmed (15 experimental, 22 control). Group difference analyses were conducted again; most previously non-significant variables remained non-significant. Distress and time since breakup demonstrated no significant differences with this matched technique. Despite these corrections, reunion with former partner [$\chi^2(1, N = 74) = 4.57, p < .03$] and infidelity [$\chi^2(1, N = 74) = 3.68, p < .05$] contained significant differences between groups. More specifically, reunion with former partner occurred significantly more in the control group, whereas the experimental group endorsed greater frequency of infidelity.

O cvej gf "ucorng"ej ctcevgtknketu The matched sample contained 53 women and 21 men (original sample: 88 women, 44 men); age ranged from 18-27 years. Race/ethnicity remained similar to the original sample with 42.9% white, 23.5% African American, 19.4% Hispanic/Latino, 9.2% Asian, and 4% Other. Year in school remained consistent with the original sample as well (32.7% Freshman, 30.6% Sophomore, 20.4% Junior, 14.3% Senior, 2.0% Fifth Year).

Nine participants completed the measures about relationships with people of the same sex. Average dissolution occurred 15.6 weeks prior to completing session one ($SD = 7.1$), with the average relationship being 19.7 months in length ($SD = 15.7$). Infidelity was endorsed as part of the breakup in 37.8% of participants. Post-dissolution, 31.1% of participants had found a new relationship at T1, 11.5% began a new relationship in the three weeks from T1 to the follow up, and 17.6% reunited with their former partners in the course of the protocol. Descriptive statistics for the full sample are below.

Descriptive Statistics

Tgrv vkpuij kr 'f go qi tcrj keu0 Examining the characteristics of the full sample participant relationships independently, the average relationship lasted 19.7 months ($SD = 15.7$). Mean dissolution occurred 19.0 weeks prior to completing measures at T1 ($SD = 14.9$). Table 2 shows additional descriptive. As demonstrated in Table 3, seventeen participants completed the survey about same sex relationships. Infidelity was endorsed as a factor in 42.4% of breakups. Post-dissolution, 29.5% of participants stated they had definitely formed a new relationship at T1, 8.3% replied “Maybe”, 13.7% began a new relationship in the three weeks from T1 to the follow up, and 14.4% reunited with their former partners in the course of the entire protocol.

Go qvkqpcn'eqr kpi 'c pf 'f km t guu'uecrgu0 Table 4 displays scale means and standard deviations for T1 and T2. Normality was tested for each emotional coping variable; skewness and kurtosis were considered acceptable for all variables. Shapiro-Wilk tests of normality for T1 demonstrated that emotional processing, emotional expression, and distress were not normal ($p < .05$). Upon further examination of the histograms of these variables, emotional processing (-1.1), emotional expression (-.9) were platykurtic and distress appeared to be positively skewed (.6). For T2, tests of normality showed non-normal distributions in emotional processing, emotional expression, rumination, and distress ($p < .05$). The histograms indicated emotional processing (-.6), emotional expression (-.8), and rumination were platykurtic (-.7). Distress at T2 contained positive skew (.9).

Rt qeguukpi 'o qf gO' Table 5 contains the descriptive statistics for the experimental group expressive writing samples and the processing mode variable. The Shapiro-Wilk test of normality showed processing mode was normally distributed. In order to ensure that the number of sentences in each sample did not affect the processing mode score, a Pearson correlation was conducted with number of sentences and processing mode. The bivariate tests indicated that the correlation was not significant ($r = -.15, p = .25$).

Dkxctkvg'lac vankou. Correlations between the variables of interest were examined in order to ascertain whether there was problematic relatedness. Table 6 shows the correlations between demographics and relationship characteristics. Table 7 gives the zero-order correlations between demographics and T1 coping variables. Table 8 contains correlations between relationship demographics and T1 emotional coping variables.

Overall correlations between demographics and relationship characteristics were not strong. The strongest, a small to medium effect size (Cohen, 1992) was a negative relationship between initiator status and perceived commitment level of the former partner (point-biserial $r = -.26, p < .01$). Higher values represented less participant initiation in the breakup. Between demographics and T1 emotional coping variables, the strongest correlation was between Emotional Processing and Emotional Expression ($r = .68, p < .001$), a very large effect size approximating an internal consistency reliability for the overall EAC scale. Rumination and distress had a large effect size association as well ($r = .63, p < .001$). Rumination and avoidance were also correlated as predicted, with a medium to large effect size ($r = .40, p < .001$). Between relationship characteristics and T1 emotion coping variables, unique correlations included former partner commitment

level and distress ($r = -.25, p < .001$), initiator status and avoidance ($r = .23, p < .001$) and initiator status and rumination ($r = .25, p < .001$). Because age ($r = -.20, p < .01$) and gender ($r = -.23, p < .01$) significantly correlated with distress, they were added to the demographic block in order to control for the significant associations.

Also conducted were bivariate correlations with processing mode and gender, relationship demographics, T1 emotional coping variables, and distress. Of these, processing mode was only marginally correlated with Time Since Breakup ($r = .21, p = .09$).

Hypothesis I

A less approach-oriented style, more cognitive and behavioral avoidance, and more depressive rumination will significantly account for T1 distress above and beyond the former relationship's characteristics.

Vgww'qhl'cuwo r vkqpu'qhl't gi t guukqpO' Prior to conducting the hierarchical regression analysis using demographics, relationship demographics, and emotional coping variables, assumptions of regression were tested. Based on a histogram created from the T1 distress residuals appearing fairly normally distributed, the normality of residuals assumption was met. Additionally, a scatter plot indicated the residuals did not fit a linear pattern, nor were they heteroscedastic. Therefore the assumption of linearity was not met but homoscedasticity was demonstrated. Tolerance and VIF for all variables were considered within acceptable ranges (Pedhazur, 1997).

Vguukpi 'qhl'j {r qvj gukaO' In order to determine the relationship between the emotional coping variables and global distress, a hierarchical regression was conducted

with demographics in the first block, relationship characteristics in the second block, and emotional coping variables in the final block. All variables were T1. Table 9 presents results of the hierarchical regression.

Age, gender, and dummy coded ethnicity had zero-order correlations with emotional processing, expression, and distress; therefore they were entered as the first block. The demographic block was significant with 5.4% (*Adjusted R*²) of the variance in distress explained [$F(5, 125) = 2.50, p < .03$]. Age ($\beta = -.19, p < .03$) and gender ($\beta = -.22, p < .01$; women reported more distress) were both significant unique predictors of distress. Ethnicity variables were not significant contributors.

Relationship characteristics including length of former relationship, time since breakup occurred, initiator status, commitment level, and perceived alternatives constituted the second block. It was also significant, contributing an additional 2.5% (*R*² change) of variance [F change (10,120) = 2.59, $p < .01$]. Initiator status was the only significant unique predictor in the second block ($\beta = .25, p < .01$). Less perceived initiation of the breakup related to greater distress.

The third and final block included the T1 emotional coping variables (emotional processing, emotional expression, avoidance, and rumination) and significantly contributed 36.2% more variance to the overall model [F change = 23.09, $p < .01$]. Avoidance ($\beta = 1.38, p < .01$) and rumination ($\beta = 1.20, p < .01$) made significant unique contributions to the variance, whereas emotional processing and emotional expression did not.

Hypothesis II

Expressive writing about the relationship dissolution will provide reduction of overall distress, and increase positive outcomes in the other coping variables.

Testing of assumptions of repeated measures. For each analysis conducted, the assumption of homogenous covariance structures was met with a non-significant result to box's test of equality of covariance matrices. Sphericity is automatically met in a two-point, within-subjects design (Pedhazur, 1997). Levene's test of equality of error variances was also non-significant for all analyses, which met the assumption of homogeneity of variances. Due to the previously discussed ineffectiveness of randomization, a sample matched on distress, time since breakup, and to a lesser extent gender, and ethnicity was used to rectify the problem. In order to maintain the integrity of the analysis and complete a comparison between samples, the expressive writing hypothesis was tested using both the full sample of 111 and the matched sample of 74.

Full sample. Due to the previously found relatedness between age and T1 distress as well as gender and T1 distress (see Table 5), age and gender were used as covariates in the repeated measures Analysis of Covariance (ANCOVA) tests that were conducted separately with each emotional coping variable and distress.

Emotional processing. Repeated measures ANCOVA was conducted using T1 and T2 emotional processing scores as the within-subjects factor and the group assignment as the between subjects factor. All factors were non-significant including main effect for emotional processing over time, processing by group interaction, group by covariates, and interactions between processing and the covariates.

Emotional expression. An identical procedure was used with emotional expression as the within-subjects factor. The emotional expression by gender interaction was marginally significant [$F(1, 107) = 3.36, p < .07$]. Examination of the parameter estimates indicated that at T1, women used emotional expression more often, whereas at T2 there was no significant difference between women and men. All other main effects and interactions were non-significant.

Avoidance. Using avoidance as the within-subjects factor, the repeated measures ANCOVA yielded non-significant results. The covariate (age) avoidance interaction was marginally significant [$F(1, 107) = 3.50, p = .06$]. At T1, age did not significantly interact with avoidance, but at T2 older participants avoided marginally less.

Rumination. Rumination as the within-subjects factor yielded only one significant finding, the interaction between group assignment and rumination [$F(1, 107) = 3.84, p < .05$]. Therefore, there was a significant difference between groups in change across T1 and 2. Examining the estimated marginal means and plots, it appears that though both the control and experimental groups showed reduced rumination at T2, the control group demonstrated the only significant decrease. Though the interaction was significant, the effect size was small (partial eta squared= .04).

Distress. Similarly, distress demonstrated a significant interaction between group assignment and change in distress between T1 and T2 [$F(1, 107) = 8.96, p < .01$]. Group means and plots indicated that the control group again contained the significant change over time and decreased score. Effect size was considered medium (partial eta squared= .08).

Matched sample. Because the sample discrepancy between the number of men and women in the distress matched sample might have influenced the outcome, gender was again used as a covariate for all analyses. Table 10 displays bivariate associations between demographics, emotion coping variables, and distress in the matched sample. Age again significantly correlated with T1 distress and therefore was used as a covariate in addition to gender. The assumption of equality of covariance was met for all repeated measures ANCOVA tests conducted.

Emotional processing. Emotional processing T1 and T2 as the within-subjects factor and group assignment as the between-subjects factor yielded no significant results. This included interactions between the factors as well as with the covariates.

Emotional expression. Similarly, emotional expression demonstrated no significant interactions or main effects with regards to the expressive writing task.

Avoidance. Avoidance as a within-subject factor yielded a significant interaction with age [$F(1, 70) = 4.53, p < .04$]. The interaction is considered a medium effect (partial eta squared = .06). Much like the full sample, older participants avoided less at T2.

Rumination. Contrary to the finding in the full sample, T1 and 2 change in rumination did not contain significant interaction or main effects. Both groups showed a decrease during the process of the protocol, but not significantly.

Distress. T1 and 2 distress by group did not differ significantly in this matched sample. Additionally, interactions with covariates and main effects were non-significant, contrary to prior findings in the full sample.

Hypothesis III

Processing mode may be an important mediator or moderator of the association between the emotional coping variables and perceived distress in relationship dissolution.

Mediation. Using Baron and Kenny's (1986) approach to mediation, relationships between the emotional coping variables and processing mode (the mediator) were tested. Non-significant relationships were found between processing mode and all T1 emotional coping variables (emotional processing, emotional expression, avoidance, and rumination). Therefore, the hypothesized mediating relationship of processing mode was not found in these data.

Moderation. Using Baron and Kenny's (1986) method for moderation discussed previously, emotional coping variables were centered in order to avoid multicollinearity. Prior to running the moderation analysis, an interaction term was created for each variable and processing mode. The T1 emotional coping variables (emotional processing, expression, avoidance, or rumination) and processing mode were both entered as the first block. The second block, in addition to those variables, contained the interaction term. R^2 change and beta coefficients were examined in order to ascertain whether processing mode was a moderating variable to the relationship between emotional coping variables and T1 distress. Inclusion of the interaction term did not improve any of the models; there were no significant changes in the variance explained for any of the coping terms.

Hypothesis IV

There may be gender differences involved in the experience of relationship dissolution as well as in the emotional and cognitive coping constructs. Gender was used as the moderator of the relationship between each of the T1 emotional coping variables and T1 distress, similar to the method discussed previously.

Emotional processing. Block 1 containing T1 emotional processing and gender was significant, accounting for 6.8% of the variance in distress (adjusted R^2). Both gender ($\beta = -.28, p < .01$; women exhibited more distress) and emotional processing ($\beta = -.18, p < .05$) were significant contributors. Block two did not contain a significant change in variance explained (F change = .06, $p < .82$). The interaction between emotional processing and gender was not a significant coefficient. This indicates gender does not moderate the relationship between emotional processing and distress.

Emotional expression. Emotional expression and gender constituted 4.6% of the variance in T1 distress [$F(2, 128) = 4.14, p < .02$]. Inclusion of the gender by emotional expression interaction did not contribute significantly more variance (F change = 4.36, $p < .31$). Gender does not appear to moderate the relationship between emotional expression and distress.

Avoidance. Gender did not moderate the relationship between avoidance and distress. While avoidance and gender alone accounted for 24% of the variance in distress [$F(2, 128) = 21.38, p < .001$], the interaction between gender and avoidance did not significantly add to the total variance explained (F change = .40, $p < .53$). The interaction term was not significant within the full model ($\beta = -.75, p < .53$).

Rumination. Gender and rumination accounted for 42.1% of the variance in distress [$F(2, 128) = 48.17$]. The second block including the interaction indicated a significant increase in explained variance (F change = 4.36, $p < .04$). These results indicate that gender is a moderator of the relationship between rumination and distress.

Discussion

Researchers have argued that though normative in development, relationship breakups can induce symptoms similar to post-traumatic stress disorder and complicated grief (Chung, 2003; Field et al., 2009). Previous research has focused on the question of how people experience breakups and what factors explain differences in emotional reactions. Relationship factors such as length of relationship, time passage since the breakup event, commitment level, perception of alternative relationship availability, and degree of initiation of the dissolution have previously accounted for differences in distress (Field, Diego, Pelaez, Deeds, & Delgado, 2011; Fine and Sacher, 1997; Locker et al., 2010). While these factors are unquestionably important, individual differences in functioning after dissolution are far from fully explained. The present aimed to understand more of these differences in relation to cognitive and emotional coping strategies.

Overall, it appears that coping strategies do contribute to the experience of distress after a breakup. Additionally, level of involvement in the initiation of the breakup represented an important predictor for global distress. Gender played an important role, as well, with women experiencing more distress and gender acting as a moderator between rumination and distress. While the expressive writing intervention

did not produce significant differences between control and experimental groups, it is likely attributable to randomization failure and reduction in sample size due to post-hoc matching. Similarly, processing mode did not significant relate to any of the other variables; a less structured implementation than previous studies could explain the null findings surrounding processing mode.

Hypothesis I

This study demonstrated that when controlling for demographics and relationship characteristics, avoidance and rumination were significant positive contributors to global distress after a breakup. This finding supports prior studies that found maladaptive outcomes in relation to utilization of these two constructs (Nolen-Hoeksema, 2008; Ottenbreit & Dobson, 2002; Segerstrom et al., 2000). Rumination and avoidance are symptoms associated with DSM-IV recognized disorders, namely depression, PTSD, and anxiety (Blalock & Joiner, 2000; Nolen-Hoeksema, 1991). Chung et al. (2003) demonstrated that participants who had experienced a breakup showed avoidance at significantly higher levels than medical students, historically a stressed sample. Avoidance and rumination accounted for nearly all of the 36% increase in total variance explained in block three. This illustrates the importance of these factors in the consideration of global distress following a relationship breakup.

As predicted, avoidance and rumination were positively correlated. Some researchers hypothesize that rumination on one specific thought or emotion may provide the opportunity to avoid more painful or difficult aspects of the breakup (Moulds et al., 2006). Additionally, this data resembles findings from the Impact of Events Scale:

intrusive thoughts, a similar but still divergent construct, and avoidance were positively associated (Horowitz et al., 1979; Schwarzwald, Solomon, Weisenberg, & Mikulincer, 1987). Keane, Zimering, and Caddell (1985) argued that although reflection after a traumatic event is normal, avoidance of those reflective thoughts could cause intrusion or maladaptive focus at a later point in time. This can result in more distress, much like a suppression effect, even four months after the event (Lawrence, Fauerbach, & Munster, 1996).

Alternatively, some researchers would argue that self-report measurement of avoidance and rumination in relation to distress is futile (Gamez, Kotov, & Watson, 2010). That study found that participants had difficulty distinguishing between behavioral avoidance and distress using self-report measures. However, the authors used different components of the same structured interview for each of their variables, both independent and dependent. This could be concerning for issues of construct validity (discriminant validity, especially). Previous criterion contamination controversies include the measurement of rumination with the Ruminative Responses Scale and emotion focused coping in several coping scales. Both variables were often measured using scales that confounded the construct of interest with depressive content (see Introduction for detailed explanation). However, with further attention to this problem, researchers have strived to create measures less dependent on distress, much like Stanton with emotion approach coping (EAC).

Emotion approach coping (emotional processing and expression) showed very little association with distress in the overall model. Literature using these constructs has

focused primarily on health research and chronic illness. Some studies have studied emotion approach coping in relation to trauma, but found a positive association with these variables and presence of PTSD (Amstader & Vernon, 2008). The nature of the stressor appears to be very important in the use of these variables (Anshel, 1996; Parkes, 1986). Research studying a variety in chronicity and severity of events may provide more information as to the positive and negative aspects of emotional processing and expression. For instance, coping style has been pinpointed as a point of difference; people that routinely used problem solving benefited more from an EAC training module whereas emotional copers did not (Baker & Berenbaum, 2008). Overall, individual differences in environment, personality, and situation appear to invoke different stress and coping reactions, and in this sample EAC did not predict outcomes. Stanton and colleagues (2009) called for exploration of moderators that may be more informative as to benefits and cost of EAC, but in general these moderators were not included in this study.

The sole significant predictor in the relationship characteristics block was initiator status. This result is not entirely surprising due to the variety of significant predictors found in previous literature. Initiator status was significantly predictive of distress in several studies, with less participant participation correlating with worse mental health outcomes (Davis et al., 2003; Hill et al., 1976; Perilloux & Buss, 2008; Sprecher, 1994; Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998). However, other studies did not find this relationship (Locker et al., 2010; Sbarra, 2006; Simpson, 1990; Tashiro & Frazier, 2003). Waller and MacDonald (2010) found trait self-esteem moderated the relationship

between initiator status and distress. Participants who displayed low trait self-esteem and whose partners had initiated the breakup experienced higher levels of distress after the relationship ended. This relationship and others that remain unexplored may help clarify the contradiction found in the literature.

There is contradictory literature supporting the importance of relationship length, time passage since breakup, perceived alternatives, and commitment level, all factors that were non-significant predictors of distress in this sample. Time since breakup was associated with distress and adjustment in several studies (Field et al., 2009; Frazier & Cook, 1993; Locker et al., 2010). Even in this study, distress decreased between T1 and T2 regardless of group assignment. This indicates that due to the normative process of distance from the event allowing for a measure of comfort, differential distress may be better explicated with other variables. This explanation may also be the case with duration of relationship. However, Locker et al. (2010) found length of relationship was predictive of recovery time for women and not men. Because gender was controlled in the first block, this gender difference may not have emerged in the analyses.

Retrospective rating of more subjective measures such as commitment and perceived alternatives may have contained participant bias. Sprecher (2006) found that participants who had experienced dissolution rated their emotional involvement in the relationship differently in the course of the relationship and retrospectively. Moreover, those who had not initiated the breakup retrospectively rated themselves as more emotionally involved in the former relationship and experienced more distress than those who did not initiate. It is reasonable, then, to hypothesize that participants experiencing

distress after the breakup will attempt to explain their distress with a exaggeration of their emotional involvement when the relationship was intact. This line of reasoning can easily apply to perception of available alternatives and commitment level. The degree to which the sample is retrospectively and emotionally biased on these ratings (e.g. letting the dissolution circumstances alter their responses) will affect their importance in the distress model after dissolution. In a meta-analysis of dissolution without the retrospective aspect, commitment and perception of alternatives were modest to strong predictors of a breakup (Le, Dove, Agnew, Korn, & Mutso, 2010).

Interestingly, commitment positively correlated with rumination. It is reasonable to understand that those more committed to a relationship would spend time repetitively thinking about what went wrong. Preoccupation with the former relationship fits well into the attachment literature. Anxious attachment often results in an over-involvement with a partner and Davis et al. (2003) found that attachment anxiety related to greater preoccupation with the former partner. More specifically, those that are anxiously attached may have perceived a high commitment level with their former partners and therefore most likely demonstrate preoccupation about the former and breakup, including rumination.

Hypothesis II

Several aspects of the expressive writing intervention in this study contained problems for overall analysis and interpretations. The first was the failure of randomization to equate groups on three variables: time since breakup, reunion with former partner at T2, and distress at T1. These differences posed the difficulty for the

expressive writing task and its measurement of the time by group interaction with distress. It is not known what caused this inequality other than statistical misfortune. The matching process, while effective in equating the groups in most variables, significantly reduced the sample size and therefore the statistical power for detecting an effect.

This sample did not yield support for the EWP. In the matched sample, the only significant finding was a medium effect for the interaction of age and avoidance. Between-subject interactions were non-significant for groups, gender, and each of the emotional coping variables. In comparison, the full sample contained significant interactions of group by rumination, group by distress, gender by expression, and age by avoidance that showed a significant change in the control group rather than the experimental group. This was most likely attributable to the initial differences. Neither sample replicated the finding that members of the experimental group more frequently reunited with their partners (Lepore & Greenberg, 2002).

Frattaroli (2006) discusses the difficulty of replicating the expressive writing paradigm (EWP) in her meta-analysis. With an average effect size of .075 (Pearson's r), it is even harder to detect a significant effect with a small sample size. Expressive writing literature contains a fair number of non-significant results (Frattaroli; Harris, Thoresen, Humphries, & Faul, 2005). The current study was not exempt from these difficulties. Frattaroli (2006) and Smyth (1998) found psychological health outcomes across several domains, but concluded that there was inconclusive evidence with regards to stress, coping, and grief/bereavement type outcomes. Because relationship

dissolutions tap into each of these categories, these results are inconclusive much like previous research.

Hypothesis III

The concept of processing mode, or the concreteness with which a person thinks about an experience, has previously demonstrated connections with overgeneral memory, anxiety, depression, rumination, and emotional reactivity (Moberly & Watkins, 2006; Raes et al., 2008; Stober, 2002; Watkins, 2008). In most past studies, processing mode was an experimental condition that was induced rather than measured (assignment to concrete or abstract groups) in a cross-sectional design. However, in the study (and its follow up) that introduced the processing mode scale, concreteness of “problem elaborations”, or antecedents and consequences of a given problem were examined in conjunction with worrying.

In contrast to previous research, this study attempted to measure a participant’s spontaneously utilized processing mode rather than inducing it by experimental manipulation, as used in the past. Scored independently by trained raters from the participant’s T1 writing sample, processing mode did not correlate or predict any of the other variables in the study. This conflicts with previous literature, which found connections with avoidance, rumination, and their maintenance over time (Maria, Reichert, Hummel, & Ehring, 2012; Sanders & Lam, 2010; Watkins, 2004; William et al., 2007). However, there are several differences between these studies and the present study.

The first study, a cross-sectional design, found that reduced concreteness, or a lower score on the processing mode scale, was associated with a greater degree of worrying (Stober et al., 2000). The second study found that participants who were diagnosed with untreated generalized anxiety disorder (GAD) were scored as less concrete compared to normal controls (Stober et al., 2002). After receiving cognitive-behavioral therapy, the GAD participants were rated as more concrete than their previous scores.

The present study hypothesized a mediating relationship between each emotional coping variable and distress and the construct of processing mode. By measuring the construct through each experimental group participant's T1 expressive writing sample, it was hoped that spontaneously used processing mode would be associated with how a person experiences distress after a breakup. More specifically, because of the previously demonstrated connections with rumination and processing of emotion, it was hypothesized that processing mode would act as a conceptual framework for the emotional processing variables.

The first major difference is that experimental induction of a certain processing mode in several previous studies ensured that participants would write either generally or in detail about whatever content that study chose. This is in contrast to the freedom participants in this study received with the less structured expressive writing instructions. They were asked to write about anything pertaining to their relationship and breakup without guidelines as to how specific they needed to be. The average processing mode score for this study (2.3) fell below the average for most of the previous studies

(approximately 3). It may be that generally, people do not utilize a concrete processing mode when recalling events without prompts or structure. Additionally, time lapse, cultural traditions, and repetition of the breakup narrative in other contexts could have played a role in affecting how a person recalled and constructed their expressive writing narrative.

Second, in several of the induction studies, processing mode was a dichotomized condition (either concrete or abstract). For this study, processing mode fell on a five-point continuous scale, as found in a manual created for its first use in a study. This scale demonstrated a restricted range, with the maximum average rating falling at just above three out of five. Because of this, it is probable that the concrete side of the scale was not effectively measured.

Finally, examining processing mode at the sample level was dissimilar to the procedures used in other studies. Stober (2000, 2002) rated six “worry” sentences per participant and analyzed their processing mode at the sentence level. Those original studies did not utilize experimental conditions, and contained much more structure in content. Researchers specifically asked for a sentence for each problem’s antecedent and consequences, resulting in six sentences (an antecedent and consequence for each of the three worrisome problems). It is possible that averaging the samples reduced the variance in the upper range of the scale. Additionally, the restriction of three worry sentences in previous studies vs. the open-ended essay format in the present study may have encouraged participants to use a more general, abstract style in writing. With one sentence a participant had to be succinct, an essay may evoke lengthier explanations.

Content-wise, sentences about worry may be different in construction than relationship breakup narratives. These three differences could have contributed to the contrast in findings between previous studies and this one.

Hypothesis IV

Gender in relationship breakups has demonstrated conflicting results in the dissolution literature. Some studies found women experience more distress in general, while others found no differences (Hill, et al., 1976; Sprecher, 1994). In addition to an examination of gender differences in distress, the present study explored the possibility of gender moderating the relationship between the coping variables and distress after dissolution. This relationship could contribute to the catalogue of contradictory past evidence regarding the existence of gender differences in the experience of relationship breakups.

With regards to gender differences, this study found that overall women experienced more distress post-dissolution. Some prior studies support this finding, while others have found no difference between men and women. Perilloux and Buss (2008) found that women endorsed more negative affect including sadness, anger, and confusion after the dissolution regardless of initiation status. fMRI studies of nine women indicated that while remembering their ex-partner, brain activity decreased in several areas, which the authors categorized as “sadness” (Najib, Lorberbaum, Kose, Bohning, & George, 2004). Additionally, higher feelings of guilt in women may explain some of this distress (Davis et al., 2003).

Several additional studies have concluded that women experience more distress after a breakup than men (Field et al., 2009; Locker et al., 2010). Simon and Barrett (2010) demonstrated that women's mental health was more affected by breakups whereas men were more affected by ongoing relationship strain. In contrast, some studies showed no gender differences between experiences of distress after dissolution (Fine & Sacher, 1997; Moller, Fouladi, McCarthy, & Hatch, 2003). Only one study found that men experienced more distress after breakups and analyzed only 15 couples in total (Rubin, Peplau, & Hill 1981). Sprecher and colleagues (1998) found gender differences in global distress on a retrospective questionnaire, but no significant differences when the participants were asked about their current levels of distress. This could indicate that the gender difference disappears over time.

There was a highly significant correlation between gender and emotion approach coping, with women using EAC more often than men. This appears to be a fairly reliable finding (Austenfeld & Stanton, 2004; Stanton et al., 2000). However, this study did not find the hypothesized moderating effect between gender, processing/expression, and distress. Marques et al. (2009) did not find gender to be a moderator for the relationship between EAC and anxiety, but did find that women utilized EAC more often in relation to anxiety disorders as a whole. While the relationship between gender and EAC is unquestionably important, other moderators may exist that can draw a clearer relationship between how processing or expressing of emotions aids or harms coping after dissolution (e.g. personality characteristics, cultural differences).

The only significant moderation model with gender was the relationship between rumination and distress. When the gender by rumination interaction was added, it strengthened the relationship between rumination and distress, specifically for women. According to the literature, women tend to utilize more emotional regulation strategies in general, but rumination specifically (Nolen-Hoeksema & Aldao, 2011). Butler and Nolen-Hoeksema (1994) found that rumination mediated the relationship between gender and depression; when rumination was controlled for, the gender disparity in depression disappeared. The moderating relationship found in this study supports the fairly reliable finding of women's use of rumination and the maladaptive consequences.

It is important to note again, however, that rumination is a notoriously difficult construct to measure via self-report without the danger of criterion contamination. As previously discussed, Nolen-Hoeksema's Response Styles Scale contained depressive content (Treyner et al., 2003). Therefore, higher frequencies of depression found in women could be confounding the rumination findings.

Finally, there exists a well-documented gender-role bias for reporting negative affect. In general, it is more "acceptable" for women to analyze and discuss their feelings. Conversely for men, anger is considered the more permissible emotion, a construct that global distress may tap into, but on which it is not as focused. Methodologically, remedying this cultural bias is difficult, but introduction of more objective measures (e.g. psychophysiological, cognitive tasks) may assist in teasing out true feelings.

Implications

These findings indicate that a preference for certain coping strategies appears to contribute to the experience of distress after a breakup. This information is useful because it may assist in pinpointing specific areas for clinicians to address when seeing a client who has recently experienced a relationship dissolution. Because other contributing factors such as initiator status are not circumstances that can be changed, these findings provide more information as to symptoms that might be alterable if the client is willing. With the knowledge that rumination often sustains and sometimes worsens depressive episodes, it will be important for a clinician to attempt an intervention in their own style to call attention to this behavior (Nolen-Hoeksema et al., 2008). This is especially true for women utilizing rumination as a tactic to avoid certain other thoughts or feelings. Clients exhibiting avoidant behavior may show resistance to confronting the reminders of the former relationship, but if distress can be reduced it is a worthwhile finding.

With regards to the expressive writing intervention, given initial group differences in several key variables and reduced sample size, this study did not provide a fair assessment of expressive writing's effectiveness. It has been successful in other contexts, such as reduction in physical symptoms (Fratarolli, 2006). Using expressive writing to break the pattern of avoidance and rumination as a supplement to therapy may allow for a quicker or more enduring recovery. The most important implication for these findings is that breakups, while normative, can create lasting distress. If clinicians address these

circumstances with understanding and knowledge, clients may utilize more effective strategies for coping with the relationship dissolution.

Limitations

This study had several limitations. First, the majority of variables were calculated with self-report measures which as discussed earlier could bias the results due to systematic method error variance based on individual differences in distress. Second, to ensure that randomization is effective, another method could have been used instead of first-come first serve assignment. Utilization of stratified random sampling from the beginning of the study might have avoided some of the pitfalls in randomization, ensuring that sample size would not be sacrificed in matching later. Third, there were a disparate number of women and men in the study. This could challenge validity. This issue in generalizability could have been avoided with sole recruitment of men once the target sample of women was reached. Finally, the cross-sectional design of several of the hypotheses does not allow for causation to be implied.

Further Directions

These findings contribute to the explanation of differential reactions to a romantic relationship breakup. However, there are still many avenues left to explore in this literature. First, though quite a few studies have examined attachment in relation to the dissolution process, the addition of coping variables in an attachment study may yield some interesting findings. Davis et al. (2003) broached this subject in part, but did not include the rumination and avoidance constructs as predictors, but rather as outcomes. Kirkpatrick and Hazan (1994) used attachment styles to predict breakups and examined

attachment stability as a function of dissolution, but again did not include the coping variables. With the explanatory power found for the variables in this study, it would be of value to explore further.

The present study examined coping variables and relationship characteristics in relation to non-married dating couples. Because coping strategies have been found to alter with age, it would be useful to see how dissolution is experienced in older samples (Nolen-Hoeksema & Aldao, 2011). For instance, the rising rate of divorce and delay of marriage has created a sample of older adults that are dating. It would be interesting to explore what coping strategies these individuals utilize when dating relationships end.

Finally, objective measures such as psychophysiological measurements may decrease bias found in the samples regarding retrospective distress. Monitoring heart rate, skin conductance, or other instruments designed to measure physical reactions while a participant is recalling their breakup event or former partner may increase insight into their experience.

Conclusion

This study has argued that although relationship dissolutions are considered normative in development, enduring distress can exist which can negatively impact an individual's mental health. The most important question posed in this literature is why certain people experience higher levels of distress while others do not. Emotional coping strategies, more specifically rumination and avoidance, may help explain the additional distress. The present study found that rumination and avoidance significantly contributed to global distress controlling for demographics and characteristics of the former

relationship. To control for initial group differences, the expressive writing intervention analysis was conducted again with a post-hoc matched sample. These analyses did not contain significant findings in relation to group assignments but found that while participant's avoidance did not vary by age at T1, older participants avoided less at T2 three weeks later. Processing mode, or the amount a person utilizes concrete or abstract thinking, had no significant relation to any other variables and did not function in any mediating or moderating relationship. Conversely, gender differences were replicated from earlier studies, though the literature is contradictory at times. Gender moderated the relationship between rumination and distress with women demonstrating the stronger relationship. Much more work needs to be done with regards to these topics, building upon this study and surpassing its limitations. Clinically, these findings may assist clinicians in addressing alterable symptoms that will prolong distress, allowing for a more adaptive response to the relationship's end.

Table 1

Descriptive Statistics for Time I Emotional Coping Variables and Distress by Group (N=111)

	<u>Emotional Processing</u>	<u>Emotional Expression</u>	<u>Avoidance</u>	<u>Rumination</u>	<u>Distress</u>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Control	12.3 (2.8)	10.7(3.4)	22.7 (4.4)	47.2 (14.0)	111.3 (29.7)
Experimental	11.7 (2.8)	10.6 (3.3)	21.74 (4.9)	43.3 (14.6)	100.9 (34.4)
<i>t</i> (109)=	.6	-.2	1.1	1.7	2.3*

Note. ** $p < .01$ * $p < .05$

Table 2

Length of Relationship and Time Since Breakup Statistics (N=132)

	Minimum	Maximum	Mean	<i>SD</i>
Length of Relationship (months)	3	73	19.7	15.7
Time Since Breakup (weeks)	1	122	19.0	14.9

Table 3

Descriptive Statistics for Former Relationship (N=132)

	<i>N</i>	Yes	No	% Yes
Same Sex Relationship	132	17	115	12.9
Infidelity	132	56	76	42.4
New Relationship Time I*	132	39	82	29.5
New Relationship Time II	111	13	82	13.7
Reunited Time II	111	16	95	14.4

Note. *11 participants endorsed "Maybe"

Table 4

Descriptive Statistics for Emotional Coping Variables and Distress

	<u>Emotional Processing</u>	<u>Emotional Expression</u>	<u>Avoidance</u>	<u>Rumination</u>	<u>Distress</u>
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Time 1	12.0 (0.3)	10.7 (0.3)	22.1 (0.5)	43.5 (1.5)	106.5 (3.1)
Time 2	11.0 (0.3)	9.9 (0.3)	18.8 (0.6)	35.4 (1.4)	93.4 (2.9)

Table 5

Descriptive Statistics for Expressive Writing Samples (N=65)

	Minimum	Maximum	Mean	<i>SD</i>
Number of sentences	7	50	23.8	11.9
Processing Mode	1.4	3.1	2.3	.2

Table 6

Bivariate Correlations for Demographics and Relationship Characteristics (N=132)

	1	2	3	4	5	6	7	8	9	10
1. Age	----									
2. Gender ^{a, b}	.04	----								
3. Ethnicity: White	.01	.09	----							
4. Ethnicity: Afr. Amer.	-.07	-.09	-.48**	----						
5. Ethnicity: Hispanic	.03	.05	-.46**	-.26*	----					
6. Length of relationship	.18*	-.20*	-.17*	.18*	.01	----				
7. Time since breakup	.02	-.04	-.05	.14	-.02	.06	----			
8. Commitment Level ^c	-.01	.00	-.12	.07	.08	.19*	.05	----		
9. Ex Commitment Level ^c	-.17	-.09	.02	-.01	.06	.16	.02	.24**	----	
10. Breakup initiator ^d	-.04	-.04	-.04	.04	-.03	-.04	.00	.15	-.26**	----
11. Perceived alternative ^e	-.05	.02	.10	-.12	-.06	-.04	.03	.04	-.08	-.04

Note. ** $p < .01$ * $p < .05$

^aPoint biserial correlation;

^bCoded 1=women, 2=men; ^cCoded 1=Not Very Committed, 2= Somewhat Committed, 3=Strongly Committed, 4=Very Strongly Committed

^dCoded 1= I initiated, 2= I somewhat initiated, 3=We both initiated, 4=My partner somewhat initiated, 5= My partner initiated; ^eCoded 1= Strongly disagree about availability of alternatives, 2=Disagree about availability of alternatives, 3=Neutral, 4=Agree about availability of alternatives, 5= Strongly agree about availability of alternatives

Table 7

*Bivariate Correlations for Demographics and Emotional Coping Variables, Time One
(N=132)*

	1	2	3	4	5	6	7	8	9
1. Age	----								
2. Gender ^{a, b}	.04	----							
3. Ethnicity: White	.01	.09	----						
4. Ethnicity: Afr. Amer.	-.07	-.09	-.48**	----					
5. Ethnicity: Hispanic	.03	.05	-.46**	-.26**	----				
6. Emotional Processing	.14	-.27**	-.12	.09	.03	----			
7. Emotional Expression	.17	-.28**	-.22*	-.03	.24**	.68**	----		
8. Avoidance	-.09	-.08	-.02	.09	.00	-.07	-.17	----	
9. Rumination	-.02	-.10	-.02	-.03	.00	.11	.09	.40**	----
10. Distress	-.20*	-.23*	-.05	.02	-.00	-.02	-.10	.63**	.46**

Note. ** $p < .01$ * $p < .05$

^aPoint biserial correlation, ^bCoded 1=women, 2=men.

Table 8

Bivariate Correlations for Relationship Characteristics, Time One Emotional Coping Variables, and Time One Distress (N=132)

	1	2	3	4	5	6	7	8	9	10
1. Length of Relationship	----									
2. Time Since Breakup	.06	----								
3. Commitment Level ^a	.19*	.05	----							
4. Commitment Level of ex ^a	.16	.02	.24**	----						
5. Breakup initiator ^b	-.04	.00	.15	-.26**	----					
6. Perceived alternatives ^c	-.04	.03	.04	-.08	-.04	----				
7. Emotional processing	.05	.00	.18*	-.04	-.19*	.04	----			
8. Emotional expression	.06	.05	.13	-.10	-.15	.12	.68*	----		
9. Avoidance	.09	.06	.06	-.12	.23**	.06	-.07	-.17	----	
10. Rumination	-.05	-.10	.24**	-.13	.25**	.10	.11	.09	.40**	----
11. Distress	-.05	.05	.13	-.25**	.24**	-.03	-.02	-.10	.46**	.63**

Note. **p<.01 *p<.05

^aCoded 1=Not Very Committed, 2= Somewhat Committed, 3=Strongly Committed, 4=Very Strongly Committed ^bCoded 1= I initiated, 2= I somewhat initiated, 3=We both initiated, 4=My partner somewhat initiated, 5= My partner initiated; ^cCoded 1= Strongly disagree about availability of alternatives, 2=Disagree about availability of alternatives, 3=Neutral, 4=Agree about availability of alternatives, 5= Strongly agree about availability of alternatives

Table 9

Summary of Hierarchical Regression Analysis for Variables Predicting Time One Distress (N=132)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	-3.33	1.50	-.19*	-2.97	1.52	-.17*	-1.89	1.18	-.11
Gender	-15.36	5.78	-.22**	-18.53	5.88	-.27**	-15.22	4.78	-.22**
Ethnicity: White	-4.05	8.70	-.06	-2.87	8.48	-.04	-4.76	6.52	-.07
Ethnicity: Afr. Americ.	-3.94	9.71	-.05	-4.55	9.62	-.06	-5.53	7.41	-.07
Ethnicity: Hispanic	-1.78	9.96	-.02	-1.10	9.73	-.06	.21	7.57	.00
Relationship Length				-.17	.19	-.08	-.14	.15	-.06
Time Since Breakup				.09	.17	.04	.20	.13	.10
Initiator Status				5.17	1.78	.25**	1.19	1.44	.06
Commitment Level				4.95	3.84	.11	.52	3.06	.01
Perceived Alternative				-1.06	2.12	-.04	-2.19	1.65	-.09
Emotional Processing							.24	1.05	.02
Emotional Expression							-1.66	.94	-.17
Avoidance							1.38	.52	.20**
Rumination							1.20	.17	.53**
<i>Adjusted R</i> ²			.05			.11			.49
<i>F</i> for change in <i>R</i> ²			2.50**			2.53*			23.09**

Note. ** $p < .01$ * $p < .05$

^aCoded 1=women, 2=men; ^bCoded 1= I initiated, 2= I somewhat initiated, 3=We both initiated, 4=My partner somewhat initiated, 5= My partner initiated; ^cCoded 1=Not Very Committed, 2= Somewhat Committed, 3=Strongly Committed, 4=Very Strongly Committed ^dCoded 1= Strongly disagree about availability of alternatives, 2=Disagree about availability of alternatives, 3=Neutral, 4=Agree about availability of alternatives, 5= Strongly agree about availability of alternatives.

Table 10

Bivariate Correlations for Demographics and Time One Emotional Coping Variables, Matched Sample (N=74)

	1	2	3	4	5	6	7	8	9
1. Age	----								
2. Gender ^{a, b}	.13	----							
3. Ethnicity: White	.12	.10	----						
4. Ethnicity: Afr. Amer.	-.20	-.09	-.45**	----					
5. Ethnicity: Hispanic	.00	.13	-.45**	-.25*	----				
6. Emotional Processing	.05	-.17	-.12	.08	.05	----			
7. Emotional Expression	-.03	-.28*	-.16	-.14	.29*	.69**	----		
8. Avoidance	-.05	-.06	.03	.14	-.06	-.23*	-.29*	----	
9. Rumination	-.15	-.01	-.05	-.06	.12	.14	.27*	.44**	----
10. Distress	-.27*	-.23*	-.12	.11	-.03	.002	.005	.51**	.60**

Note. ** $p < .01$ * $p < .05$

^aPoint biserial correlation, ^bCoded 1=women, 2=men.

APPENDIX
PROCESSING MODE MANUAL

Concreteness Rating Scale

The concept

Words differ with respect to many features. One important feature is concreteness. Think of the two words “apple” and “democracy.” Most persons would consider the first word as rather concrete, whereas the second word would be considered as rather abstract.

Also sentences differ with respect to concreteness. Take, for example, the following two sentences:

- (1) Today, I will drive to Philadelphia and go shopping.
- (2) Maybe something bad will happen.

Most persons would consider the first sentence as rather concrete. It contains details, is specific with respect to place and time, and the message is ‘clear’. In comparison, the second sentence would be considered as rather abstract/vague. It contains no details, but only an equivocal description of something, and the message is not clear.

We will be doing the same thing except with expressive writing samples. They vary in length, so it is important to remember this overall: **DO NOT RATE CONCRETENESS ACCORDING TO LENGTH.** A very long writer could have remained completely general and a short writing might have chronicled in excruciating concrete detail their breakup event.

Here is the scale from which we’ll be working:

1	2	3	4	5
Abstract/vague	Moderately abstract/vague	Neither/nor	Moderately concrete	Concrete
Indistinct, cross-situational, equivocal, unclear, aggregated, overgeneralized				distinct, situationally specific, unequivocal, clear, singular
Abstract concepts without any extensions/details; broad, general, vague, unformed	Abstract concepts with extensions, but still rather vague and undecided.	Has aspects of both	Sequences with details and concrete examples, rather specific and decided (e.g. with definite articles or possessive pronouns).	Concrete examples with specific details such as time, place, or means involved.

Instructions:

- You are rating on the scoring sheet each writing sample sentence by sentence. Then input it into the provided excel file (concretenessworksheet.xlsx). Label and save it as “yourinitials.concretenessworksheet.” For instance, mine would be “LW.concretenessworksheet.”
- Don't use the concreteness scale for evaluative ratings! There's a tendency to rate statements that one considers silly or dull as "abstract." Do not evaluate on the quality of the writing or spelling or grammar.
- With breakup stories, many people will disclose very personal information. Be careful not to reward/punish based on your emotional reactions to the writing, it's about details.
- Sentences that feel like editorial side comments or are indiscernible fragments are non-scorable.
 - Example: “I wrote about most of this stuff in the last session.”
“But as of three days ago, I no longer am.”
“Filling out these questions was somewhat painful because the thoughts of my previous boyfriend, X, are constantly consuming my mind.”

More abstract/vague/general if:

- Traits/hypothetical constructs (e.g., insecurity, self-doubts, lazy, etc.) are rather aggregated and cross-situational. Give more abstract ratings, i.e., 1 or 2.
- General markers such as "somehow", "perhaps", etc. are additions that make statements less concrete. Give ratings that are more to the abstract end of the scale.
- Writings will be more abstract if they use words like “all the time”, “always”, “every once and awhile”. These are more general terms.
- Cliché terms are more abstract: “It will work out for the best”, “What happens, happens”

More concrete if:

- Specific events/actions (e.g. a fight, an argument) are rather definite. Give more concrete ratings, i.e., 4 or 5.
- Rate writings as more concrete if they mention specific instances/events (e.g. their first date, details about how they met, specifically the actions involved when they broke up)

- Specifics and details are more concrete; however, length of the sentence does not necessarily mean that a writing is more concrete!
- A helpful hint is to try to visualize the sentence as a movie. Therefore if setting, time, and situation are clear enough to do that, they are more concrete.

COMMON PITFALLS TO WATCH OUT FOR

- A sentence is not necessarily more concrete if it's longer. They may have written a lot of general statements that could apply to different relationships. A good rule of thumb is whether what they're saying could apply to many relationships (AKA "We were very trusting," or "He cheated on me," in contrast to the more concrete "We trusted each other because we had a conversation about our trust everyday" or "He cheated on me with my best friend. They met in a class and began having an affair.")
- Ignore spelling or grammar.
- Emotions don't mean it's abstract- if there is detailed context, it's concrete. (I felt love everyday (vague) vs. I fell in love with him after we went to Florida)
- Ignore nonsense sentences or parts of sentences (don't extrapolate)

Breaking it down number by number:

5- Concrete examples with details such as person, time, place, or means involved.

- "I ended the relationship by telling him that my senior year was going to be very busy and demanding and it wouldn't be fair to either of us to stay together."
 - More abstract if: "I ended the relationship because I was busy." score: 2
- "So 3 days ago I told him I needed to be single, that long distance was just too hard and that neither of us were making enough of an effort to really make things better."
 - More abstract if: "I broke up with him because we were long distance." score: 2
- "We both fell in love and had a great relationship, but after high school I came to NC State and he went to UNC- Chapel Hill."
 - More abstract if: no name of colleges, "We fell in love and had a great relationship and after high school went to college." score: 1

4- Sequences with details and concrete examples, rather clear and decided

- "We only saw each other three times since college began, which I could not handle; I missed my boyfriend."

- More abstract if: “I missed him” OR “We did not see each other much.” score: 1
- More concrete: “We only saw each other three times since college began, and two of the three times were in large groups of people.” score: 5
- “We tried things on and off for two years, but when he went to college, we decided to call it quits.”
 - More concrete if: “We tried things on and off, but when he went to Duke, we decided to call it quits because it was just too difficult for us to have a long distance relationship.” score: 5
 - More abstract if: did not specify amount of time
- “I went back to an old boyfriend after a couple of months, upsetting my current very much.”
 - More concrete if: “I went back to my last boyfriend after a couple of months, and when X found out, we had a blow up argument which ended the relationship.” score: 5
 - More abstract if: “I went back to an ex-boyfriend.” score: 2

3- Interpretation in both directions possible.

- “Our relationship never got so deep that a breakup would scare me for a long time.”
 - More concrete if: “Our relationship never got intimate enough that my future relationships or my mindset would be affected for long.” score: 4
 - More abstract if: “Our breakup didn’t scare me.” score: 1
- “But we knew that when Governor’s school ended that we would have complexities because we didn’t live near each other.”
 - More concrete if: We knew that when Governor’s school ended that we would have trouble connecting face to face or emotionally because we lived 8 hours away.” score: 5
 - More abstract if: “We knew when we left that we would have trouble staying together.” score: 1

2- Abstract concepts with extensions, but still rather vague and undecided

- “We have decided that as long as we are making each other happy and getting along, we deserve one another.”
 - More concrete if: “We decided his sunny personality and my sense of humor made each other happy, we deserve one another.” score: 5
- “I was dating a girl I knew from high school.”

- More concrete if: “I was dating a girl I knew from sophomore year of high school, algebra class.” score: 4
 - More abstract if: “I was dating a girl I met.” score: 1
 - “I have recovered more than the average person would.”
 - More concrete: “I have recovered more than other people, taking months and months to get over one person.” score: 3
 - More abstract if: “I recovered quickly.” score: 1
- 1- Abstract concepts without any extensions/details; broad, general "phrases."
- “Well time went by and we got back together.”
 - More concrete: “Two months went by and we missed each other so we got back together.” score: 2
 - “Me and X had a really good relationship.”
 - More concrete: “Me and X had a really supportive, loving relationship where we talked every single day about what we had done.” score: 4
 - “We often shared our love through affection.”
 - More concrete: “We shared our love through little actions like tender kisses and surprise presents; one time he gave me a giant teddy bear.” score: 5

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