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The Relationship of Adult Attachment Dimensions and Neuroticism to Relationship Self-Regulation

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The Relationship of Adult Attachment Dimensions and Neuroticism
to Relationship Self-Regulation

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A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

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ABSTRACT

The Relationship of Adult Attachment Dimensions and Neuroticism to Relationship Self-Regulation

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Self-regulation in the context of a relationship, described as relationship “work,” is a powerful predictor of relationship satisfaction. Identifying individual characteristics that predict the practice of relationship self-regulation (RSR) can inform clinical and couple relationship education interventions. Anxious and avoidant attachment have been linked to shortcomings in self-regulation in various contexts, and were hypothesized to be negatively associated to individual practice of RSR. Neuroticism, a personality trait characterized by negative emotionality, was also hypothesized to be negatively related to RSR. Neuroticism was tested as a moderator of the relationship between attachment and RSR. Data from first-married men (589) and women (912) taking the RELATE online questionnaire was used in correlational and OLS multiple regression analyses to test hypotheses and a research question. Bi-variate correlations for all predictor variables and RSR were negative and statistically significant for women and men. Regression analyses echoed those associations. Moderated multiple regression analyses testing a moderator effect of neuroticism were significant for anxious attachment and RSR, but not for avoidant attachment. Results are interpreted as support for the theoretical model tested.

Key Words: romantic attachment, attachment behaviors, avoidant attachment, anxious attachment, neuroticism, self-regulation, relationship self-regulation, moderation.

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Introduction and Purpose of the Study

What does it take to have a good marriage? Among other things, “working at it” is one of the more intuitive components of maintaining and improving a relationship that has been fruitful in explaining what makes couples satisfied in their marriages. Relationship self-regulation (RSR) has been proposed as a construct measuring how much individual partners work to sustain their relationship (Halford, Wilson, Lizzio, & Moore, 2002). The use of the word “work” to describe maintaining and improving a marriage relationship is like the work needed to set and meet the goal of keeping a house clean; however, RSR is focused on the individual efforts and strategies needed to set and meet relationship-oriented goals. RSR is associated with higher marital satisfaction in newly married couples, explaining 35% of the variance in one sample (Halford, Moore, Wilson, Farrugia, & Dyer, 2004). Furthermore, RSR significantly predicted marital satisfaction intercepts in a 5 year longitudinal study of newly married couples (Halford, Lizzio, Wilson, & Occhipinti, 2007). Since working at the relationship appears to be a potent predictor of satisfaction, more research is needed on what predicts a couple’s likelihood of doing RSR.

Romantic attachment is another potent predictor of marital satisfaction that may predict individual practice of RSR. Recent developments in couple therapy have focused therapeutic interventions on the attachment relationship. Such a heavy focus of time and resources on making attachment bonds more secure needs justification in light of alternative therapies that focus on communication training or behavioral modification. Emotionally Focused Couples Therapy (EFT) is a therapeutic model designed to restructure couples’ attachment bonds (Johnson, 2002). While a meta-analysis of outcome studies showed significant effect sizes for EFT (Johnson, 2003), further research is needed to understand how EFT works to bring about

change in pair bonds, including the role of a secure attachment relationship on known predictors of marital satisfaction like RSR.

One possible line of justification for attachment based therapy centers on understanding what components of healthy relationships are predicted by secure attachment. Stated another way, if a couple is securely attached, what healthy aspects of a relationship might they also be predicted to have? A recent flowering of adult attachment research has begun to answer this question, clarifying why securely attached individuals have higher marital satisfaction and overall individual health (Simpson, 1990; Simpson, Rholes, & Nelligan, 1992). A secure couple attachment provides a foundation upon which marital partners can build and work on a healthy relationship.

Despite RSR's predictive power of marital satisfaction and the known benefits of secure attachment in marriage, there is no research exploring the relationship between these two constructs. The general purpose of this study was to explore the association between RSR and attachment, thereby helping to build the scientific understanding of RSR predictors and to answer two overarching questions: "What characteristics of marriage make an individual more likely to do relationship work, i.e. RSR?" and more specifically, "Are securely attached individuals more likely to work on maintaining their marriage than those who are insecurely attached?" Because individuals with an insecure attachment style show deficits in individual self-regulation meta-competencies, like goal setting and goal appraisal, I hypothesized that secure attachment style would predict higher rates of RSR in a married sample. The outcome of this study will help clarify if attachment focused therapy increases the likelihood that married individuals access the benefits of RSR and help identify relevant predictors of who is most likely to benefit from RSR-based couple relationship education (CRE) and therapy.

Definition of Terms

The following independent, dependent, and moderating variables are studied:

Relationship self-regulation. Grounded in self-regulation theory, relationship self-regulation (RSR) is the individual regulation of thought, affect, and behavior needed to set and realize relationship-oriented goals. Conceptually different from the term “relationship work” in the group therapy literature, RSR describes how much individual partners work to sustain their relationship. Thus, RSR is the individual work needed to think about, set, prioritize, implement, and adjust goals as needed to bring about relationship maintenance and improvement. It is described theoretically as a set of goal-related meta-competencies (Halford et al., 1994) represented empirically by two measurement domains: relationship strategies and effort (Wilson, Charker, Lizzio, Halford, & Kimlin, 2005). Strategies refer to various behaviors used to enhance relationship satisfaction, measured by items like, “I try to apply ideas about effective relationships to improving our relationship” (Halford et al., 2007). An example is regular recreational dating after marriage. Effort refers to attention and persistent attempts to enhance the relationship, measured by items such as, “If my partner does not appreciate the change efforts I am making, I tend to give up” (negatively loading). Effort in the above example could be shown by continuing to date despite time constraints or restarting after periods of not engaging in the behavior.

Individual self-regulation. This broadly refers to the processes involved in personal, self-directed behavior. It may be conceptualized as an internal and/or transactional superstructure encompassing various interrelated, repetitive component phases used to bring about a purpose. Specifically, self-regulation may encompass up to five phases: goal selection, goal cognition, directional maintenance, directional change or reprioritization, and goal

termination (Karoly, 1993). Individual self-regulation (ISR) at various levels of complexity may be exemplified by tasks ranging from filling a glass of water to writing this thesis. The ability to set various goals, work towards them, and realize them falls under the conceptual umbrella of self-regulation.

Attachment. Attachment is one of various behavioral systems, “a species universal, biologically evolved neural program that organizes behavior in ways that increase the chances of an individual’s survival and reproduction, despite inevitable environmental dangers and demands” (Mikulincer & Shaver, 2007a, p. 10). Attachment theory posits that “these behavioral systems govern the choice, activation, and termination of behavioral sequences aimed at attaining particular ‘set-goals’—states of the person-environment relationship that have adaptive advantages for individual survival and genetic reproduction” (Mikulincer & Shaver, 2007a, p. 10). The attachment system serves to protect a person by ensuring proximity to care-giving others (attachment figures) in times of threat, pain, or need. When activated at such times, normative attachment functioning uses various behavioral sequences to achieve a set-goal of “felt security,” after which non-attachment activities may resume, such as exploration (Sroufe & Waters, 1977). Individuals develop characteristic patterns of attachment behavior in close relationships through repetitions of attachment-system activation and caregiver response (Ainsworth, Blehar, Waters, & Wall, 1978). Individual differences may diverge from normative “secure” attachment by using either, or both, of two strategies in responding to attachment-system activation: avoidance and anxiety.

Secure attachment. A pattern of response to attachment-system activation characterized by seeking and attaining a feeling of “felt security” through proximity maintenance (physical,

emotional, or symbolic) with an attachment figure. These individuals are comfortable with close relationships and score low on both avoidance and anxiety dimensions of attachment measures.

Insecure attachment. Insecure attachment is defined as any pattern of adult attachment in which the individual exhibits attachment behaviors that are avoidant, anxious, or both. These individuals score high on at least one dimension. Insecure attachment patterns may be further specified as preoccupied, dismissive, or fearful.

Anxious attachment. A pattern of exhibiting attachment behaviors characterized by anxiously seeking approval from others and therein seeking to find safety or security. These individuals score high on the anxiety dimension, but low on the avoidant.

Avoidant attachment. A pattern characterized by avoidance of closeness because of negative expectations and maintenance of their sense of self-worth by denying the importance of closeness in relationships; these individuals score high on the avoidance dimension, but low on the anxious.

Neuroticism. In the five-factor model of personality, neuroticism is a super-ordinate trait marked by experiencing unpleasant and disturbing emotions, emotional instability, or “the extent to which a person is feeling upset or unpleasantly engaged rather than peaceful” (Clark and Watson, 1991, p. 321). In this study, it is also referred to as poor emotional health. The construct is measured by combining trait anxiety and depression personality scores.

Theoretical Context

Two theories inform this study: self-regulation theory and attachment theory.

The study of individual self-regulation (ISR) stems from psychology’s first efforts to describe volition. Terms used in various disciplines for ISR include freedom, autonomy, agency, choice, purposiveness, and self-direction, among many others. In its various formulations, ISR

describes the role of self-generated events in the regulation of behavior. Karoly, a pioneer in the field, offered the following definition (1993):

Self-regulation refers to those processes, internal and/or transactional, that enable an individual to guide his/her goal-directed activities over time and across changing circumstances (contexts). Regulation implies modulation of thought, affect, behavior, or attention via deliberate or automated use of specific mechanisms and supportive meta-skills. The processes of self-regulation are initiated when routine activity is impeded, or when goal directedness is otherwise made salient (e.g., the appearance of a challenge, the failure of habitual action patterns, etc.). Self-regulation may be said to encompass up to five interrelated and iterative component phases: 1. goal selection, 2. goal cognition, 3. directional maintenance, 4. directional change or reprioritization, and 5. goal termination.

This formulation of ISR acknowledges the influence that both individual processes and environmental interactions have on each component phase. Individuals regulate their behavior in concert with external influences on self-regulatory processes. An individual is capable of modulating thought, affect, behavior, or attention for the attainment of a goal, and these modulations can be carried out through time and various contexts. These specific regulatory processes and meta-competencies allow the individual to change themselves to fit what is desired and bring about change on their environment. An example of self-regulation involving attachment processes is provided in the section on attachment theory.

ISR concepts have been applied to more specific domains, such as modification of on-task classroom behaviors (Sanders, 1978), adult learning (Gredler & Schwartz, 1997) and control of addictive behaviors (Werch & Gorman, 1988), but only recently to marriage relationships. Early application of ISR procedures to family intervention involved self-management training

for parents to increase implementation of child-management skills (Sanders & Glynn, 1981). Halford, Sanders, and Behrens (1994) proposed the first application of self-regulation skills to couples therapy. Arguing that Behavioral Couples Therapy (BCT) implicitly focuses clients on changing their partners, the new model of intervention put individual control of change as primary to partner change by applying self-regulation concepts in the context of a relationship. This is the theoretical application of ISR to relationship self-regulation (RSR). This is consistent with research suggesting maritally distressed people have low ratings of self-efficacy in influencing their relationship, a mark of low ISR (Notarius & Vanzetti, 1983). Halford et al. (1994) further proposed that RSR is a helpful way of conceptualizing relationship work. Thus, the construct of RSR grew out of interest in identifying how individual partners can change their own behaviors, i.e. ISR, to maintain or improve their relationship.

Relationship self-regulation has been incorporated into couple relationship education (CRE) programs, like Self-PREP and Couple CARE (Halford, Sanders, & Behrens, 2001; Halford et al., 2004). Outcome studies of CRE programs that teach the basic skills of RSR show statistically significant increases in marital satisfaction (Halford et al., 2004). It seems the belief that “working” for a better relationship has some validity, and the skills of how to work for a relationship can be taught.

Attachment.

The other theory informing this study is attachment. John Bowlby’s original formulation of the theory identified certain adaptive responses in parent-child relationships that elicit behaviors aiding infant survival (Bowlby, 1973). In a world where independent survival is unlikely, attachment behaviors elicit caregiver responses and maintain proximity to the caregiver, providing the person with a feeling of security (Sroufe & Waters, 1977). When the

attachment system is activated to elicit a response from the caregiver, the outcome of such experiences forms the individual's attachment. If the attachment behaviors elicit a response that comforts and protects, the person begins to form a secure attachment. When attachment behaviors are unsuccessful in attaining the desired response of felt security, an insecure attachment forms. Foundational experiences in early close relationships thus affect how a person responds to threat or distress (Karen, 1998).

When attachment needs are unmet, certain secondary attachment strategies may be activated to elicit response. Research suggests two major dimensions of secondary attachment behaviors: anxious and avoidant (Fraley & Waller, 1998). Anxious clinging and detached avoidance were originally identified through experimental separations and reunions of mothers and infants (Ainsworth et al., 1978). Anxious attachment strategies are characterized by hypervigilance to relationship threats, abandonment, and negativity. Clinging or jealous behavior may be used to seek closeness. Avoidant attachment is characterized by distancing, inflated self-concept and extreme independence. Avoidant strategies often take the form of disparaging intimacy and degrading close others in an effort to cut off from painful experiences of loneliness in the face of threat or distress.

The secure, anxious, and avoidant attachment strategies evident in childhood have also been found in adult romantic relationships (Shaver, Hazan, & Bradshaw, 1988; Mikulincer & Shaver, 2007a). Romantic pair bonds are thus seen as an adult expression of core attachment processes, conceptually parallel to childhood attachment with some noted differences, like reciprocal care-giving and sexual involvement (Hazan & Shaver, 1994). Attachment system functioning and the attachment strategies used in romantic relationships are fundamental features

of pair bonds and have broad impact on various aspects of relationship functioning. A review of those impacts relating to RSR and neuroticism is given below.

By way of initial rapprochement of these theories, attachment theory's concept of "behavioral systems," of which the attachment system is one of many, were postulated originally by Bowlby (1969/1982) as self-regulatory devices that coordinate cognition, affect, and behavior to achieve set "goal-states." Indeed, attachment theory may be thought of as a theory of self-regulation, with various behavioral systems self-regulating thought, affect, and behavior for goals. Such goals are arranged hierarchically to afford maximum likelihood of survival of the organism, given the internal and external situation.

A theoretical example bridges these theories to elucidate ISR processes in normative attachment system functioning. Finding that he or she is too distant from an attachment figure (whether externally or by internal, symbolic representation), a discrepancy is appraised between the actual circumstances and the desired goal-state of "felt security." An assessment of the likelihood of attaining security informs goal selection, such that hyperactivation or deactivation of the attachment system may occur. The goal-state of security being attainable, lower-level goals subordinate to achieving the goal state are selected as viable strategies, such as approaching the attachment figure and initiating physical contact. This arrangement of cognitive, emotional, and behavioral strategies available for employment in goal attainment is possible because of coherent goal cognition; the arrangement of super-ordinate and subordinate goal systems is also a function of goal cognition. The lower-level goals used to bring about physical contact may continue by virtue of directional maintenance, or they may be disengaged after being found ineffective or reprioritized as other efforts to attain the primary goal-state are engaged, such as asking for soothing from the attachment figure. The transactional nature of ISR

is clear when accounting for the response of the attachment figure, since effective self-regulation will vary in goal selection based on attachment figure response to selected behaviors. Crying may elicit a soothing response from some attachment figures while distancing others. Goal termination occurs when no discrepancy is appraised. With proximity established, security is felt and the goal-state achieved. Self-regulating for this goal-system is no longer required, so lower-level goals are disengaged and resources can now be directed to attainment of other super-ordinate goals, like exploration or feeding. It is important to note that, while this example may seem more conscious, the meta-competencies and processes of ISR may also be unconscious or habitual expressions of goal-directed behavior.

Review of the Literature

Self-regulation and attachment.

To understand the hypothesized link between attachment and RSR, a review of the relationship between attachment and individual self-regulation is offered, grouped conceptually under RSR meta-competencies. The expected impact of attachment style on the meta-competencies in RSR is shown by the impact of attachment on ISR found in the literature.

Like individual self-regulation, RSR is believed to consist of specific meta-competencies. Halford et al. (1994) proposed that the salient meta-competencies in RSR are: appraisal, goal setting, implementation of change, and evaluation of change efforts. Appraisal of relationship functioning includes an ability to identify current and potentially influential behaviors relating to the relationship maintenance and enhancement. This may include awareness of contextual stressors, the influence of their own behavior on the relationship, and the reciprocal impact of negative partner behaviors in relationship problems. The next meta-competency, goal setting, is the ability to define specific behaviors that the individual can change to address the relationship

issues appraised. Implementation is the active process of enacting the steps necessary to achieve the relationship goal. Evaluation involves appraising if the goal-directed changes were made and if they influenced the relationship to produce the desired outcome.

Appraisal. Appraisal of relationship functioning may be negatively affected by both anxious and avoidant attachment styles. Anxious attachment is marked by appraisal of threats and problems in goal pursuit in exaggerated or pessimistic terms (Mikulincer & Shaver, 2007b). This type of appraisal may negatively affect their expectations of reaching relationship goals, cutting off goal implementation in the initial stage because of low self-efficacy (Bandura, 1986). Avoidant attachment is characterized by a tendency to block out attachment-related goals from awareness (Mikulincer & Shaver, 2007a). Attachment-related goals are relationship oriented, so it is possible that appraisal of relationship functioning, the start of RSR goal setting, is similarly excluded from awareness, thereby decreasing RSR from even getting a start. Indeed, if the goal of avoidant defenses is to keep the attachment system deactivated (Main & Weston, 1982) and minimize closeness (Mikulincer & Shaver, 2007a), then appraisal of relationship functioning would likely be decreased for these individuals because the appraisal would require them to acknowledge the exact interdependence being avoided. These same avoidant defenses lead these people to not acknowledge a need for revision in their beliefs, decisions, and plans when mistaken (Mikulincer & Shaver, 2007a). This deficit in goal selection and directional change, components of ISR, may also lead to a deficit in RSR appraisal, since awareness of the influence of their own behavior on the relationship is fundamental to this RSR competency.

Goal setting. The next meta-competency, goal setting, is the ability to define specific behaviors that the individual can change to address the relationship issues appraised. Goal setting in RSR is related to ISR components goal selection and goal cognition. In Cantor &

Fleeson's (1991) goal definition process, both self-relevant and contextual influences shape the definition of goals such that needs and motives inform possible paths. Bowlby's various behavioral systems, aimed at certain "goal-states," provide one explanation of what needs and motives are relevant in certain situations. Relevant to this discussion of RSR, the attachment behavioral system is that system regulating proximity to close others (Bowlby, 1973). Thus, one might expect that individual attachment differences would inform needs and motives related to relationship enhancement and maintenance, and thereby impact what goals are selected.

In the ISR literature, attachment avoidance and anxiety have been linked to achievement motivation, which relates to Cantor & Fleeson's goal definition process. Specifically, avoidant attachment has been linked to less frequent adoption of mastery goals, while anxious attachment is associated with stronger fear of failure and striving to avoid it (Elliot & Reis, 2003). These associations suggest one possible mechanism by which attachment may affect RSR goal setting. Namely, since attachment affects people's motivation in setting goals in general contexts, it would affect what motives inform their goal setting in relationships as well. For example, avoidant attachment defenses may discourage selection of challenging relationship goals, because the real possibility of frustration or failure would likely reactivate the attachment system, an anti-goal state for avoidants (Mikulincer & Shaver, 2007a). In the case of anxious attachment, the fear of failure and motivation to avoid the anti-goal states of failure or rejection may dissuade the initial selection of relationship goals, especially considering that anxious attachment is associated with lower self-esteem and self-efficacy (Schmitt & Allik, 2005; Gamble & Roberts, 2005; Strodl & Noller, 2003; Cozzarelli, Karafa, Collins, & Tagler, 2003). For insecurely attached individuals, the motives and needs worth pursuing in relationships would seem to inform a goal selection process less conducive to RSR goals.

Attachment style likely affects goal cognition as well, the second process of ISR related to goal setting in RSR. Cognitive goal representations or striving-referent construals perform a governing function among various goals (Ford, 1987). Goal cognition allows a hierarchy of higher-level and lower-level goals, in which higher-level goals determine lower-level goals and lower-level goals contribute to attaining higher-level goals (Carver & Scheier, 1998). A study of attachment-related differences in goal construal and organization for personal goals found significant associations for both anxious and avoidant attachment (Mikulincer & Shaver, 2007b). Anxious attachment was associated with high conflict among goals. Avoidant attachment was associated with less commitment to goal pursuit. Both forms of insecure attachment were associated with a decrease in goal integration, or the coherency of the goal hierarchy. Such deficits in goal cognition for personal goals may be one mode by which insecure attachment may also decrease RSR goal setting. Considering the case of anxious attachment, Mikulincer and Shaver (2007a) suggest that these individuals may construe attachment-unrelated goals as conflicting with the pursuit of attachment security. Such conflict in the goal hierarchy could certainly decrease RSR goal setting if such goals are not construed as lower-level contributions to higher-level attachment needs. Hyperactivation of the attachment system, a characteristic of anxious attachment, could result in decreased self-regulating for non-attachment-related goals, such as RSR goals, if attachment related goals are prioritized above RSR goals. Avoidant attachment may decrease RSR goal setting by the same tendency to block out attachment-related goals from awareness noted as a possible detriment to RSR appraisal. If the decrease in goal integration cited above is related to RSR, then RSR goal setting could easily be one such hole in a fragmented goal system of avoidant individuals.

Implementation. The third meta-competency in RSR identified by Halford, et al. (1994), is implementation, the active process of enacting the steps necessary to achieve the relationship goal. Avoidant attachment may decrease RSR implementation by way of lower commitment to goals. Avoidant attachment is associated with low commitment to goal pursuit, a dimension of ISR (Mikulincer & Shaver, 2007b). A logical extension of this finding would be a decrease in RSR implementation reported by avoidant individuals, since commitment to goal pursuit falls under the conceptual umbrella of implementation. Even without these findings linking avoidant attachment to lower commitment to goal pursuit in general, the characteristics of avoidant attachment would suggest that people endorsing this pattern of behavior would have a marked decrease in commitment to relationship-oriented goals.

Evaluation. The final meta-competency in RSR involves appraising if the changes were made and if they influenced the relationship to produce the desired outcome. There is not sufficient research exploring attachment style differences in ISR goal evaluation to inform how attachment would impact this competency in RSR.

Neuroticism and ISR.

While research has explored predictors of ISR, research investigating what factors predict who is able to practice RSR is limited. One salient predictor of ISR that relates to couple interaction is neuroticism, a personality trait marked by experiencing unpleasant and disturbing emotions. The cognitive patterns common to neuroticism seem to interfere with the ability to effectively self-regulate on an individual level. Specifically, the areas of goal setting, self-monitoring, self-evaluation, and self-reinforcement have been shown to be negatively affected by poor emotional health (Endler & Kocovski, 2000).

In the first study of RSR predictors, higher levels of self-neuroticism predicted lower levels of self-RSR for both males and females (Brown, 2009). This finding may suggest that some similarities exist between ISR and RSR, and that some of the same factors that predict ISR also predict RSR. This same study found that proximal relationship factors were more powerfully predictive of RSR than distal family of origin factors; only female mother-child relationship quality had a direct effect on her RSR (Brown, 2009). Given the hierarchical nature of ISR in goal selection and effort, it is not surprising that a prospective measure of neuroticism showed statistically significant impacts on both self-RSR and partner-RSR. The effort and strategies required to maintain and enhance a relationship may indeed be a goal of neurotic individuals, but the goal striving that is part of self-regulation involves a complex hierarchy of needs that directs cognitive and emotional resources to various goals. It may be that neurotic individuals have difficulty self-regulating for relationship oriented goals.

Relevant to this discussion of RSR predictors, neuroticism and both forms of insecure attachment are related. Particularly, a summary of more than 30 studies correlating neuroticism measures with attachment showed a significant, positive association between anxious attachment and neuroticism in all studies, while two-thirds of the studies found significant correlations with avoidant attachment and neuroticism (see Mikulincer & Shaver, 2007a, p. 375 for summary of findings). Furthermore, both constructs have noted ties to ISR dysfunctions. However, the nature of the proposed impacts on RSR is unclear, especially when accounting for both variables simultaneously. Therefore, an important step in research of RSR predictors is exploring how, or if, attachment and neuroticism interact in affecting RSR. One possibility is a moderated relationship. A moderated relationship is one where the relationship between two variables varies as a function of a third variable (Aguinis, 1995). For example, the relationship between

RSR and either attachment or neuroticism could vary as a function of the other variable. In this case, the slope predicting RSR by insecure attachment style may be different for individuals with high versus low neuroticism. Alternatively, a moderated relationship could mean that the slope predicting RSR by neuroticism is different for high versus low insecure attachment. In a moderated relationship, low neuroticism would buffer the effects of high insecure attachment on RSR. If this were the case, a positive test for moderation would suggest either secure attachment or low neuroticism are protective factors on increasing an individual's likelihood of practicing RSR despite high conditions of the other variable. This test would help clarify by what means neuroticism and insecure attachment impact use of RSR.

In considering neuroticism as a moderator of attachment and RSR, it is important to note that neuroticism can exist in relationships with both high and low marital functioning. While a dysfunctional marital relationship can lead to poor emotional health, a person can be in a good marriage but have depression and anxiety problems that are not a result of marital problems (Beach, Sandeen, & O'Leary, 1990). This suggests that poor emotional health has multiple etiologies and can be seen in securely and insecurely attached people.

Hypotheses and Research Question

Hypothesis 1: It is hypothesized that securely attached married individuals will report higher levels of RSR than married individuals reporting insecure attachment patterns.

Hypothesis 2: It is hypothesized that neuroticism will be negatively related to RSR.

Research Question 1: The relationship of neuroticism as a moderator of the relationship between anxious and avoidant attachment dimensions and RSR will be explored.

Methods

Sample

The sample consisted of married individuals, 912 women and 589 men, in their first marriage who took the RELATionship Evaluation (RELATE) online between 2009 and 2011. It is possible that some of the participants were married to each other. The length of marriage spanned from 0-3 months to more than 40 years for both women and men. Dating, cohabiting, remarried, and homosexual couples were not included, as the purpose of the study is to identify predictors of RSR in first-married heterosexual couples. RELATE limits use to respondents 18 years or older.

The means and standard deviations for age, as well as frequency distributions for race, religion, education, and income are presented for women and men in Table 1; the frequency distribution for length of marriage is presented in Table 2. Respondents completed the RSR, AAQ, and Neuroticism scales. All but 8 men and 11 women also reported the length of their relationship; the noted missing values for length of relationship account for the smaller sample sizes used in those analyses including length of relationship. The sample was not representative of the U.S. population for men or women, with an oversampling of Caucasian, highly-educated, high-income individuals (see Table 1). The female sample consisted of 75% Caucasian individuals, while the male sample was 74% Caucasian. Table 1 also shows the education level attained in this sample is remarkably high, with only 4% of women and 9% of men reporting no college experience, compared with 43% of women and 45% men in the U.S. population (U.S. Census, 2010).

Procedures

The data for this analysis will come from the RELATionship Evaluation data base (RELATE: Holman, Busby, Doxey, Klein, & Loyer-Carlson, 1997). RELATE is a 271-item questionnaire created to provide a comprehensive measurement of romantic relationships. It assesses multiple variables that have been shown to be predictive of relationship satisfaction and variables related to satisfaction as theorized by ecosystemic theory (Busby, Holman, & Taniguchi, 2001). RELATE has been used in a variety of applications, like classroom and counseling settings, to help couples, couple educators, and therapists better understand the factors that contribute to relationship satisfaction. Participants are asked to answer items on a 5-point Likert-type scale (1=never/strongly disagree, 5=very often/strongly agree) as well as answer basic demographic questions. The scales of RELATE demonstrate high internal consistency (between .70 and .90), and have been shown to be both valid and reliable (alpha and test-retest reliability) (Busby et al., 2001). This study will use the following 4 scales on RELATE: the relationship self-regulation scale for self, the anxious and avoidant subscales of the adult attachment questionnaire, and the trait happiness and calmness scales as a combined measure of neuroticism.

Measures

Dependent variable.

Relationship self-regulation. The relationship self-regulation subscale on RELATE consists of eight items taken from the Behavioral Self-Regulation for Effective Relationships Scale (BSRERS) (Wilson et. al, 2005). The BSRERS was developed and tested with three different samples. Factor analysis showed a 2 factor structure comprised of relationship strategies and effort. The scale showed high internal consistency, with a Cronbach's Alpha

>0.80 in both newly married samples. Concurrent and convergent validity were also reasonably established. For a more detailed description of the development and psychometric properties of the scale, see Wilson et al. (2005). In this study, participant's rating of their own RSR is assessed by taking the sum total of the items in the Relationship Self-Regulation Scale of RELATE to create the RSR variable. Responses are given on a 5-point Likert-type scale ranging from (1) "not at all" to (5) "very true". Items are presented in the order as numbered, but presented here grouped by RSR subscales. The following items compose the RSR strategy subscale: (1) "I try to apply ideas about effective relationships to improve our relationship", (4) "I actually put my intentions or plans for personal change into practice", (7) "I give my partner helpful feedback on the ways she/he can help me achieve my goals", and (8) "If the way I'm approaching change doesn't work, I can usually think of something different to try." These items compose the RSR effort subscale: (2) "If things go wrong in the relationship I tend to feel powerless", (3) "I tend to fall back on what is comfortable for me in relationships, rather than trying new ways of relating", (5) "Even when I know what I could do differently to improve things in the relationship, I cannot seem to change my behavior", (6) "If my partner doesn't appreciate the change efforts I am making, I tend to give up." Items 2, 3, 5, and 6 are reverse coded to control for response bias. Total scale scores range from 8 to 40, with higher scores indicating a higher level of RSR.

Independent variable.

Attachment style. Participant attachment style will be assessed using the attachment subscale in RELATE. This is the Adult Attachment Questionnaire, a continuous measure based on Hazan and Shaver's three original attachment vignettes (Simpson et al., 1996). It contains 17 items answered on a seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree) to

measure two dimensions of attachment: avoidance and anxiety. The avoidance subscale consists of eight items measuring an orientation toward avoiding or withdrawing from close or intimate relationships. It contains the following items: (1) "I find it relatively easy to get close to others"; (2) "I'm not very comfortable having to depend on other people"; (3) "I'm comfortable having others depend on me"; (4) "I don't like people getting too close to me"; (5) "I'm somewhat uncomfortable being too close to others"; (6) "I find it difficult to trust others completely"; (7) "I'm nervous whenever anyone gets too close to me"; (8) "Others often want me to be more intimate than I feel comfortable being." Items 1 and 3 are reversed coded to control for response bias. A higher total score indicates higher levels of avoidance, with a possible subscale range of 8 to 56.

The anxiety dimension is measured by nine items assessing the extent to which respondents have conflicted thoughts and feelings about whether others can be counted on in relationships. Respondents scoring high on the anxiety subscale see themselves negatively and are preoccupied with issues of commitment, loss, and abandonment. These are the items: (9) "I rarely worry about being abandoned by others"; (10) "Others often are reluctant to get as close as I would like"; (11) "I often worry that my partner(s) don't really love me"; (12) "I rarely worry about my partner(s) leaving me"; (13) "I often want to merge completely with others, and this desire sometimes scares them away"; (14) "I'm confident others would never hurt me by suddenly ending our relationship"; (15) "I usually want more closeness and intimacy than others do"; (16) "The thought of being left by others rarely enters my mind"; and (17) "I'm confident that my partner(s) love me just as much as I love them." Items 9, 12, 14, 16, and 17 are reversed coded to control for response bias. A higher subscale score indicates higher levels of anxiety, with the range of possible scores being 9 to 63.

Respondents with low scores on both dimensions represent a prototypical “secure” attachment style. The AAQ demonstrates construct and criterion validity and is a reliable measure of adult attachment (Simpson et al., 1996). Cronbach’s alpha for the avoidance subscale is .70 for men and .74 for women, while the anxiety subscale is .72 for men and .76 for women (Simpson et al., 1996).

Moderating variable.

Neuroticism. Neuroticism will be measured by the Calmness and Happiness scales of RELATE. This is a 7-item scale measuring general personality traits. Previous research established a significant relationship between neuroticism and RSR using a similar measure of neuroticism, but with the inclusion of a self-esteem measure (Brown, 2009). Responses are given on a 5-point Likert-type scale ranging from (1) “never” to (5) “very often”. Participants use this scale to rate themselves using the following descriptors for anxiety (Calmness scale); “worrier”, “fearful”, “tense”, and “nervous”; for depression (Happiness scale); “sad and blue”, “feel hopeless”, and “depressed.” Total scale scores range from 7 to 35, with higher scores indicating more neurotic traits. The subscales used in the Neuroticism scale have all been shown to have high internal consistency for males and females ($\alpha = .72$ and $.68$; $\alpha = .76$ and $.82$; respectively) and high test-retest reliability ($\alpha = .70, .78$, respectively).

Control variables.

Halford and associates (2007) showed RSR seems to change as a function of relationship length. Length of the relationship will be controlled for statistically by being included in the regression equation.

Length of the relationship. This variable will be measured as respondents indicate the length of their marriage by answering the following question, “How long have you and your

partner been married?” Responses are coded as follows: 0 to 3 months (1), 4 to 6 months (2), 7 to 12 months (3), 1-2 years (4), 3-5 years (5), 6-10 years (6), 11-15 years (7), 16-20 years (8), 21-30 years (9), 31-40 years (10), More than 40 years (11). Values on this scale range from 1 to 11 with higher values indicating longer relationships.

Chronological age. Since the age range covered over 40 years, participant age will be included as a control variable to account for possible differences in RSR due to age or cohort effects. Respondents are asked to give their chronological age in years.

Analyses

I used SPSS 17, a statistical package, to manage data and run the following analyses.

I calculated mean and standard deviation for age, neuroticism, and both RSR scales. I calculated the frequency distribution for religion, race, income, education level, and length of marriage.

Bi-variate Pearson correlations were run for total RSR and RSR subscales, both attachment dimensions, neuroticism, age, and length of marriage (see Table 4). Correlations were two-tailed with the level of significance set at 0.05. Any p -values less than 0.01 and 0.001 were also reported at those respective levels.

I ran 6 separate Ordinary Least Squares (OLS) multiple linear regression analyses, 2 for the first hypothesis (male and female) and 4 for the research question; all were tested separately for males and females. Models were tested separately for males and females to account for possible non-independence because some of the participants were married to each other. Additionally, because past research has shown that use of RSR varies over time in the relationship, the length of the relationship was controlled for statistically by including it in the analyses.

The self-report of RSR scale was the dependent variable in the model used to test hypothesis 1. The model tested anxious and avoidant attachment patterns by regressing self-report of RSR onto the anxiety and avoidance subscales as independent variables, tested separately for males and females, with the above control variables. Following Fraley and Waller's (1998) suggestion, self-report of attachment was assessed with continuous scores instead of categories, since attachment anxiety and avoidance are dimensional phenomena.

Hypothesis 2 was tested with the bi-variate correlations between neuroticism and total RSR. Correlations were run separately for men and women.

The RSR scale was the dependent variable used for each of two models to test research question 1. The test of moderation was performed separately for anxious and avoidant attachment, thus two separate, but similar models. To test the moderating effect of neuroticism on individuals' report of anxious and avoidant attachment and their self-report of RSR, I created interaction terms by including the product of either anxiety or avoidance multiplied by neuroticism in the respective regression equations. Self-report of neuroticism, as well as anxiety and avoidance scales, were also included in each regression equation for correct specification. To account for and preemptively decrease collinearity that is likely when the product of scales is also included in the equation, I translated all scales into z -scores before creating the interaction term. This method is suggested by Hoffman (2005) as a way to reduce collinearity in moderated multiple regression models. Thus, the respective regression equations regressed self-report of RSR onto z -scored anxiety or avoidance scales, neuroticism scales, as well as the product of z -score anxiety multiplied by z -score neuroticism and the product of z -score avoidance multiplied by z -score neuroticism and the error term. An interaction between anxiety multiplied by neuroticism or avoidance multiplied by neuroticism while controlling for avoidance, anxiety, and

neuroticism indicates a possible moderator effect (Hoffman, 2005). If the coefficient of either interaction is statistically significant along with the constituent coefficients in this model, then I may infer that individuals who score higher on neuroticism have a different slope of attachment and RSR than those individuals who score lower on neuroticism.

I conducted diagnostic tests regarding the assumptions of a linear regression model. To test for collinearity, I used VIFs and Condition Indices as diagnostics (Hoffman, 2005). To test whether the residuals of the dependent variable were normally distributed, I created a residual normal probability plot. I performed a graphical test to identify heteroskedasticity. I ran a Cook's D to identify any influential observations.

Results

The means and standard deviations for RSR, avoidant and anxious attachment, and neuroticism are presented in Table 3 for women and men. The distribution of scores on the neuroticism scale was skewed slightly, but had an acceptable distribution in both samples. Mean scores for women and men on the neuroticism scale were 2.79 ($SD = 0.64$) and 2.52 ($SD = 0.68$) respectively.

Bi-variate Pearson-r correlations for the RSR combined scale, RSR subscales, avoidance and anxious attachment subscales of the AAQ, neuroticism, length of marriage, and age are shown in Table 4. Men's and women's correlations of total RSR and all three independent variables were similar in size and all significant at $p < 0.01$ level. Correlations of age and length of marriage with total RSR were statistically significant for women, while only length of marriage and total RSR was related for men. Other correlations of age and length of marriage with the study variables were not significant at the 0.05 level.

The correlations of the RSR subscales had some similarities and differences between men and women (Table 4). RSR effort had larger negative correlations with attachment avoidance, attachment anxiety, and neuroticism for men and women than did RSR strategies. The correlation of anxious attachment and RSR strategies was not significant for women—the only non-significant correlation among the independent variables with RSR and RSR subscales—while the same correlation was still significant at the 0.01 level for men. Furthermore, the correlation of women's anxious attachment and RSR effort was the largest among the study variables ($r = -0.441, p < 0.01$), which may account for the significant, large correlation of the combined RSR scale and anxious attachment.

Chronological age was included in preliminary analyses as a control variable, but did not yield significant relationships with total RSR for men or women, and was dropped from further analyses as a control variable to improve model specification.

Hypothesis 1

It was hypothesized that securely attached individuals would report higher levels of RSR than individuals reporting insecure attachment patterns. Tested separately for males and females, models used Ordinary Least Squares (OLS) multiple linear regression analyses. Both models used self-report of total RSR as the dependent variable and avoidance and anxiety subscales of the AAQ as independent variables, with length of marriage as a control variable. All models were statistically significant and all three regression coefficients were statistically significant for both males and females, supporting the hypothesis (see Table 5). A slope beta increase in attachment avoidance, attachment anxiety, or length of marriage is associated with a decrease in RSR. The model for females accounts for roughly 20% of the total variance of RSR ($R^2=0.196$;

Adjusted $R^2=0.193$; $F(3,897)=72.813$, $p<0.001$). For males, the model also accounts for roughly 20% of the total variance of RSR ($R^2=0.195$; Adjusted $R^2=0.190$; $F(3,577)=46.451$, $p<0.001$).

Various diagnostic tests regarding the assumptions of a linear regression model were run for both females and males. To test for collinearity among the independent variables, VIFs (Variance Inflation Factor) were obtained. VIFs for all variables were near 1, well below any indication of collinearity (Hoffman, 2005).

Graphical tests were run to determine if the distribution of the error term was normal. Both “q-q plots” and “p-p plots” were run on the studentized residuals with only minor deviations from a straight line, suggesting that the residuals do follow a nearly normal distribution.

To test the assumption of homoscedasticity, a scatter plot of the residuals on the y-axis and the predicted value on the x-axis was analyzed. A random distribution suggested there was no heteroscedasticity in either model. This conclusion is consistent with the small standard errors and highly significant p-values in the model, since heteroscedasticity increases the standard errors of a model and masks significance where a relationship may be present.

Testing for influential observations with Cook’s D and graphical tests of standardized residuals with predicted values showed 1 observation for women and 3 observations for men that exceeded rules of thumb (Hoffman, 2005). Inquiry about those observations showed response values within the possible range of the scores, suggesting that the scores were not input incorrectly. Further analysis of the scores showed responses that were consistent on the scales for reversed scored items, suggesting no acquiescence response bias on selected scales. Review of other responses on the RELATE for the female observation indicated severe relationship

dissatisfaction and high trait depression. While the reviewed observations were influential, they were assumed to be meaningful values and left in the models.

Hypothesis 2

Hypothesis 2 suggested that neuroticism would be negatively related to RSR. This hypothesis was supported from the bi-variate Pearson-r correlations between neuroticism and RSR (Females $r = -0.387$, $p < 0.01$, $n = 912$; Males $r = -0.379$, $p < 0.01$, $n = 589$). There was a significant, negative correlation between women and men's self-reported neuroticism and her or his self-reported practice of RSR (Table 4). For both women and men, neuroticism was more negatively correlated with RSR effort than RSR strategies.

Research Question 1

The analyses for this research question explored the possible role of neuroticism as a moderator between avoidant and anxious attachment dimensions and RSR. The interaction terms in the models used to test for a moderator effect of neuroticism on avoidant attachment were not significant for women or men (Table 6). The interaction terms in the anxious attachment models were statistically significant ($\beta = -0.072$, $p < 0.05$ for women; $\beta = -0.085$, $p < 0.05$ for men). This indicates that individuals scoring high on attachment anxiety and low on neuroticism have a statistically significant different slope predicting RSR than those scoring high on both anxious attachment and neuroticism. These data can also be interpreted to indicate that individuals scoring high on neuroticism but low on attachment anxiety would have a different slope predicting their RSR than if they reported high attachment anxiety and neuroticism. Still, an interaction between anxiety multiplied by neuroticism while controlling for anxiety and neuroticism indicates a possible moderator effect (Hoffman, 2005). Since the models were

statistically significant (Table 6) and the interaction terms were significant in the case of anxious attachment, neuroticism may moderate the relationship between anxious attachment and RSR.

Collinearity was not an issue for any of the models; the highest VIF for any of the four models was 1.35. The distribution of the error term also appeared to be normal. The influential observations found in the models testing hypothesis 1 were included in these models as well.

Discussion

The results from this study suggest that there is a significant, negative relationship between insecure attachment and the use of relationship self-regulation. First-married men and women reporting higher avoidant and/or anxious attachment in romantic relationships report lower RSR; thus, hypothesis 1 was supported. These relationships were statistically significant and represent a modest amount of the variance in RSR (men: $R^2=0.195$; women: $R^2=0.196$). Hypothesis 2 was also supported, replicating prior cross-sectional research (Brown, 2009) showing a significant, negative relationship between neuroticism and RSR for men and women. In response to research question 1, the results indicate a possible moderator effect of neuroticism for men and women on anxious attachment, but not avoidant attachment. The results suggest that the relationship between RSR and anxious attachment or neuroticism does vary as a function of the other variable.

The general purpose of this study was to explore the association between RSR and attachment. This study provides some preliminary evidence in support of the primary research questions behind this study: “What makes someone more likely to do relationship work?” and “Are securely attached individuals more likely to work on maintaining their marriage?” Secure attachment is predictive of higher rates of RSR in a first-married sample according to these results. Conversely, the higher scores on either anxious or avoidant attachment dimension that

indicate insecure attachment predict less RSR. Though the mode by which these relationships occur cannot be determined by this study design, the theoretical model proposed focuses on deficits to individual self-regulation identified in the literature. The findings of this study support the theoretical model proposed. One possible interpretation of the data is that insecure attachment for men and women negatively impacts their ability to do important meta-competencies of relationship self-regulation. The most researched deficits of insecure attachment on aspects of individual self-regulation are those relating to RSR goal appraisal, goal setting, and goal implementation. Specifically, insecure attachment has been linked to differences in goal selection, goal cognition, and directional maintenance. The findings of this study support the hypothesized model presented, that ISR deficits associated with insecure attachment similarly affect RSR. The modest sized R^2 values (men: $R^2=0.195$; women: $R^2=0.196$) also help clarify the degree to which insecure attachment may affect an individuals' practice of RSR in marriage.

Though the study findings align with the theoretical model presented and previous research on RSR, alternative interpretations of the results remain viable because the study design does not allow for definitive interpretation. While lacking research support, the following characteristics of secure attachment could also explain why secure attachment predicts RSR. Attachment style is associated with positive emotional regulation in couple contexts, more open communication, and collaborative problem solving (Kobak & Hazan, 1991), as well as self-reporting more competence in communication (Anders & Tucker, 2000). When faced with distress, securely attached individuals are able to go to their partner for help to decrease negative emotions and make better use of their emotions in problem solving. It may be that secure attachment allows the emotional safety, open dialogue, and attention that are necessary to work

together on establishing and pursuing relationship oriented goals. Secure attachment also may decrease concerns of having positive intentions of relationship improvement be misunderstood because of poor communication. The role of communication and related variables as predictors of RSR is not established and should be a topic of future research.

Another possibility is related to the benefits of secure attachment on cognitive openness and exploration. Secure attachment provides a base that “encourages exploration and a cognitive openness to new information. It promotes the confidence necessary to risk, learn, and continually update models of self and the world” (Johnson, 2002, p. 39). Practicing RSR may involve some level of risk, and likely involves models of self and partner. Because securely attached individuals are more open to new information and ambiguity (Mikulincer, 1997), the uncertainty of relationship appraisal and modification may be less distressing, conducive to a more regular practice of RSR. The preceding interpretations of the results will remain viable while awaiting future research.

Despite only a growing literature on predictors of RSR, the results of this study align with prior research in this area. Brown (2009) identified a strong association between self-reported neuroticism and RSR, replicated here with a large, negative correlation for both men and women. In the same study, Brown cited depression and anxiety as inhibitors of ISR meta-competencies and further proposed that the negative association of neuroticism and RSR, now found in both studies, may support the idea that some ISR predictors also predict RSR. Specifically, proximal (current) predictors of ISR, such as neuroticism, were suggested as mutual predictors of ISR and RSR instead of distal family of origin factors. Following in this vein of research, the current study found strong associations of both anxious and avoidant attachment to RSR. Insecure attachment in romantic relationships is a predictor of ISR meta-competencies, as reviewed

previously, that has proximal impact on the marriage; this also helps clarify how distal family of origin factors may relate to current factors predicting RSR, as romantic attachment style has family of origin connections (Collins & Sroufe, 1999; Scharf & Mayseless, 2001; Doyle, Lawford, & Markiewicz, 2009). Thus, Brown's proposal is supported by this study. This study also corroborates Halford et al.'s findings (2007) that the slope predicting RSR declines slightly with increasing length of marriage; chronological age itself was not found to predict RSR in regression analyses for women and men.

The mixed results of the moderated models for research question 1 are congruous to the theoretical model presented, but must be tentatively interpreted. The presence of a moderator effect suggests that the relationship between two variables varies as a function of a third variable (Aguinis, 1995). The cross-sectional design used in this analysis does not allow for inference as to which variable moderates the relationship of the other variable with RSR. For example, the results equally suggest that the relationship between RSR and either anxious attachment or neuroticism vary as a function of the other independent variable. Nevertheless, this preliminary statistical support for moderation suggests that either low anxious attachment or low neuroticism could be protective factors on increasing an individual's likelihood of practicing RSR despite high conditions of the other variable.

Offering a further qualification to the interpretation of the results, Kenny suggests that moderator variables that are not manipulated could stand as "proxy" moderators instead of the "true" moderator (Kenny, 2011). Applying this idea to the present study, it could be that anxious attachment moderates neuroticism and RSR, vice-versa, or that neither are "true" moderators of the other, acting as proxy moderators of a related variable that actually moderates the relationship. To clarify how a "proxy" moderator would apply in this situation, I offer an

untested, hypothetical example that could explain the findings. Anxious attachment is related to intensification of negative emotions that call for attention and care from attachment figures, such as sadness, anxiety, fear, jealousy, and anger (Mikulincer & Shaver, 2007a). If there were two groups of anxiously attached individuals, one group more prone to emotional intensification and one less prone to it, then emotional intensification could be the “true moderator” for which neuroticism would stand as a proxy. In this hypothetical example, those who are less prone to emotional intensification would report higher RSR and lower neuroticism, while the group more prone to emotional intensification would report less RSR and higher neuroticism (frequency of experiencing anxious and depressive emotions). This arrangement would result in a statistically significant interaction between anxious attachment and neuroticism because the slope predicting RSR for this group of anxiously attached individuals would vary with higher and lower report of neuroticism, even though the hypothetically “true” moderator in the example is emotional intensification. The viability of such a “proxy” moderator in this analysis shows that the interpretation of a significant interaction term in this study remains tentative and requires further research.

The lack of statistical evidence of moderation between avoidant attachment and RSR suggests that the relationship between avoidant attachment and RSR does not vary as a function of neuroticism. Alternatively, it may also suggest that the relationship between neuroticism and RSR does not vary as a function of avoidant attachment. Furthermore, it is not likely that the insignificant findings represent Type II statistical error, or erroneous rejection of a moderated relationship. Low statistical power may lead to Type II statistical error (Aguinis, 1995). While low power is common in tests of moderation with two continuous variables (McClelland & Judd, 1993), the large sample size, small standard errors, and significant results for anxious attachment

using the same sample suggest sufficient power to identify a significant relationship. Thus, while it remains possible that a moderated relationship exists that was not supported statistically, it is not likely.

The mixed results of the moderated regression analyses are congruous with the theoretical model presented. As shown in the review of literature, anxious and avoidant attachment affect different aspects of ISR; the proposed impact of each attachment dimension on RSR meta-competencies is similarly unique. When assuming different mechanisms of impact on RSR, it is neither surprising nor disconfirming of the theoretical model to have different moderators for avoidant and anxious attachment. Since neuroticism is marked by experiencing unpleasant and disturbing emotions or emotional instability, it seems less likely to be related to mechanisms by which avoidant attachment affects RSR than those mechanisms related to anxious attachment. Thus, the theoretical model may account for the significant interaction effects in the statistical models testing anxious attachment and neuroticism for both men and women and the corresponding insignificant results for avoidant attachment.

Limitations and Future Research

The sample generally had low mean scores and variability of neuroticism, so there may be effects of higher neuroticism not demonstrated in these results. Measurement error is possible because only one measure was used for each construct. Common method error is also possible when using only self-report measures. The results may not generalize to the population, given the non-random sampling method and the non-representative sample.

The cross-sectional nature of the data does not allow for insight on causation; therefore, conclusions must be viewed ultimately as significant associations. Thus, it remains viable that RSR could predict secure attachment and neuroticism. Future research should explore the

longitudinal relationship between these variables, as the causal inference obtained thereby will more surely inform appropriate clinical and couple relationship education priorities.

Exploration of couple level data may provide further insights as to how these variables interact in marriage, as well as account for possible common method bias in measurement. For example, insecure attachment predicted decreased revisions in an individual's perception of their partner when they were exposed to expectation-incongruent information about their partner (Mikulincer & Arad, 1999). Over time, the effect this would have on the partner may be decreased RSR, if the partner's work isn't recognized and reinforced. Furthermore, a couple's "match" on attachment style may affect RSR use in significant ways that could be helpful for clinical and couple education efforts.

Because there are multiple interpretations of how attachment may impact RSR, further research should explore what aspects of secure attachment impact the use of RSR in marriage, e.g. goal appraisal and implementation, cognitive openness and exploration, better emotion regulation in couple contexts and more open communication, or some other path. Process analytic models, such as mediation and moderation, may be useful in this endeavor. Given the significant relationships of both attachment and neuroticism on RSR, the results might eventually help clarify if there are shared mediating variables, like emotional dysregulation, or separate paths of influence; it is also possible that neuroticism mediates the relationship of anxious attachment and RSR. The lack of collinearity between these two variables in this study is an important finding in beginning to understand how these predictors relate to RSR. Findings from further process research may clarify these relationships and thereby inform clinical priorities in addressing two relevant predictors of RSR.

Research exploring the measurement of RSR may also prove a valuable continuation of Wilson et al.'s (2005) work. Specifically, future research may clarify how specific items and subscales relate to the theoretical meta-competencies of RSR identified by Halford (2005), i.e. appraisal, goal setting, implementation of change, and evaluation of change efforts. This will allow better theoretical research on this construct, as empirical evidence may then be tied more specifically to the rich theoretical literature on ISR while beginning an empirical body of support for RSR theory. Furthermore, refining what the "effort" and "strategies" subscales are measuring will help clarify what the combined scale is measuring. For example, does the description of RSR as relationship "work" (Halford et al., 2002; Halford et al., 2007; Wilson et al., 2005) more aptly describe RSR "effort," or must RSR strategies also be included when measuring "working" on the relationship? Clarifying how RSR measures relate to their theoretical underpinnings in RSR meta-competencies may help elucidate what relationship "work" is and why it so powerfully predicts marital satisfaction (Halford et al., 2007; Wilson et al., 2005). Future research in this area may also explore the cognitive, emotional, behavioral, and relational correlates of RSR effort and strategies to inform research on predictors of successful implementation of RSR. For example, in this study, the bi-variate correlations of RSR strategies and neuroticism were nearly half the size of those for RSR effort for women and men (Table 4). Does RSR effort relate more to emotional state while RSR strategies with cognitive, behavioral, or relational factors such that emotional instability, or neuroticism, correlates more with RSR effort? Research on the measurement of RSR that facilitates answering this kind of question may improve research on RSR predictors and intervention.

Outcome studies of CRE programs designed to improve RSR may include attachment and neuroticism as moderators of RSR improvement to help clarify what role these predictors

play for participants seeking to improve their marriage. The goal is for couples to improve their marital satisfaction, an outcome of practicing RSR (Halford et al., 2007; Wilson et al., 2005). Process analysis used to understand what decreases their ability to practice RSR will allow intervention aimed at reaching those people as well. Research looking at changes in RSR, attachment, and neuroticism as a result of completing couple education programs based on RSR, such as Couple CARE (Halford et al., 2004), may also be beneficial in understanding appropriate intervention.

Clinical Implications

Attachment theory is used to ground some models of clinical intervention (Johnson, 2004; Bowlby, 1988). Self-regulation theory and associated RSR findings are similarly used in clinical settings and couple relationship education (Halford et al., 1994; Halford et al., 2001; Halford et al., 2004). Clinicians use research that informs theory to validate their focus on modifying attachment or RSR in marriage. There is preliminary justification for direct clinical intervention with attachment as a positive predictor of an individual's ability to practice RSR in their marriage. These findings, interpreted through self-regulation theory, support secure attachment as a hierarchical, important goal-state conducive to individual practice of RSR, as previously explicated in the literature review. The lack of a moderated relationship between avoidant attachment and neuroticism as predictors of RSR may suggest that both are possible points of intervention relating to improved RSR.

Couple educators may also benefit from these findings, as some couple educators deliver education programs using RSR for intervention and education, e.g. Self-PREP and Couple CARE (Halford et al., 2001; Halford et al., 2004). The findings add insecure attachment as a participant factor that may decrease an individual's benefit from the programs; the findings also

corroborate prior research (Brown, 2009) identifying neuroticism as one such factor. It may be recommended, therefore, for clinicians to measure individual attachment dimensions and neuroticism before offering couple education aimed at improving RSR.

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Appendix

Table 1.

Demographic characteristics of sample

	Female (n=912)	Male (n=589)
Mean Age (SD)	34.19 (9.91)	38.69 (10.69)
Range	18-76	19-77
	%	
Race/Ethnic Origin		
Caucasian (White)	75.3	74.3
African (Black)	7.5	8.7
Asian	6.0	4.8
Native American	0.4	-
Latino	6.2	7.3
Mixed/Biracial	2.5	2.4
Other	2.1	2.6
Religious Affiliation		
Catholic	21.4	20.3
Protestant	26.8	32.9
Jewish	-	5.5
Latter-day Saint (Mormon)	9.9	-
Hindu	1.1	1.2
Buddhist	0.7	0.7
Other	14.9	11.9
None	25.2	26.1
Education		
Less high school	0.3	1.4
High school diploma or equivalency (GED)	3.7	7.5
Some college	25.4	26.0
Associate's degree	7.4	5.6
Bachelor's degree	18.6	25.3
Graduate or professional degree, not completed	16.7	7.6
Graduate or professional degree, completed	28.0	34.6
Income (Personal gross yearly)		
None	14.5	2.2
Under 20,000	22.1	7.2
20,000-39,999	22.0	14.8
40,000-59,999	15.1	17.8
60,000-79,999	9.9	12.5
80,000-99,999	6.4	11.8
100,000 or above	10.0	33.7

Table 2.

Length of relationship

	Female (n=901)	Male (n=581)
0-3 months	8.1	6.7
4-6 months	4.2	4.3
7-12 months	7.0	4.6
1-2 years	16.1	12.9
3-5 years	18.0	15.1
6-10 years	17.0	16.4
11-15 years	8.9	10.5
16-20 years	6.4	9.8
21-30 years	11.0	15.8
31-40 years	2.7	2.6
More than 40 years	0.7	1.2

Note: presented as the percentage distribution

Table 3.

Characteristics of study variables

	Female (n=912)	Male (n=589)
Total RSR	3.38 (0.56)	3.27 (0.57)
Avoidant Attachment	3.08 (1.01)	3.15 (0.99)
Anxious Attachment	3.01 (1.17)	2.94 (1.07)
Neuroticism	2.79 (0.64)	2.52 (0.68)

Note: Values are means, with standard deviations in parentheses

Table 4.

Bi-variate Pearson-r correlations for study variables for women and men

	1	2	3	4	5	6	7	8
1. RSR Total	---	.877**	.840**	-.328**	-.375**	-.387**	-.083*	-.069*
2. RSR Effort	.876**	---	.476**	-.366**	-.441**	-.423**	-.051	-.019
3. RSR Strategies	.869**	.523**	---	-.187**	-.188	-.231**	-.095**	-.106**
4. Att. Avoidance	-.371**	-.380**	-.267**	---	.341**	.324**	.000	.008
5. Att. Anxiety	-.309**	-.404**	-.131**	.299**	---	.487**	.039	.037
6. Neuroticism	-.379**	-.436**	-.221*	.368**	.487**	---	-.020	-.038
7. Length of marriage	-.095*	-.052	-.115**	.008	-.031	.054	---	.734**
8. Age	-.049	.011	-.097*	.069	-.004	.041	.748**	---

Notes: Females above the diagonal, Males below the diagonal.

Female n= 912 for columns 1-6 and 8; n=901 for column 7.

Male n=589 for rows 1-6 and 8; n=581 for row 7.

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

Table 5.

Multiple linear regression analyses for total relationship self-regulation

	<i>F</i> value (<i>df</i>)	<i>R</i> ²	Adj. <i>R</i> ²	<i>B</i>	<i>SE B</i>	β	<i>p</i> value
Male (n=581)	46.451 (3,577)	0.195	0.190				<0.001
Avoidant attachment				-0.183	0.023	-0.314	<0.001
Anxious attachment				-0.115	0.021	-0.216	<0.001
Length of marriage				-0.021	0.009	-0.091	0.016
Female (n=901)	72.813 (3,897)	0.196	0.193				<0.001
Avoidant attachment				-0.125	0.018	-0.227	<0.001
Anxious attachment				-0.144	0.015	-0.302	<0.001
Length of marriage				-0.022	0.007	-0.095	0.002

Table 6.

Moderated multiple linear regression analyses for total relationship self-regulation

	<i>F</i> value (<i>df</i>)	<i>R</i> ²	Adj. <i>R</i> ²	<i>B</i>	<i>SE B</i>	β	<i>p</i> value
Female (n=912)	74.022 (3,908)	0.197	0.194				<0.001
Avoidant attachment				-0.128	0.018	-0.230	<0.001
Neuroticism				-0.176	0.018	-0.317	<0.001
Interaction term				-0.015	0.015	-0.030	0.317
Female (n=912)	75.787 (3,908)	0.200	0.198				<0.001
Anxious attachment				-0.143	0.019	-0.256	<0.001
Neuroticism				-0.156	0.019	-0.281	<0.001
Interaction term				-0.036	0.016	-0.072	0.020
Male (n=589)	50.390 (3,585)	0.205	0.201				<0.001
Avoidant attachment				-0.154	0.023	-0.268	<0.001
Neuroticism				-0.161	0.023	-0.280	<0.001
Interaction term				0.000	0.019	0.000	0.999
Male (n=589)	40.082 (3,585)	0.171	0.166				<0.001
Anxious attachment				-0.103	0.025	-0.180	<0.001
Neuroticism				-0.177	0.025	-0.309	<0.001
Interaction term				-0.041	0.019	-0.085	0.030

Note: The interaction term is the product of the other two terms. All variables are *z*-scored.