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Predictors of Co-Rumination in Adolescent Friendships

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Abstract

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EdS, Georgia Southern University, 2014

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Proposal in Partial Fulfillment

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Doctor of Philosophy

Developmental Psychology

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Abstract

Co-rumination is talking excessively about problems with another person such as a same-sex best friend. Co-rumination is found to impact adjustment, such that co-rumination is related to an increase in depressive and anxiety symptoms but also an increase in friendship quality. The consequences of co-rumination have been studied, but predictors of co-rumination over time have yet to be studied. The study investigated factors that may predict co-rumination such as attachment style (secure, dismissing, preoccupied), expectations of rejection (angry, anxious), and gender orientation (masculinity and femininity) over a 9-month period. Theoretical frameworks included response styles theory, maternal deprivation theory, and rejection sensitivity theory. The study involved secondary analyses of an archival data set in which adolescents responded to surveys about their same-sex friendships at two time points between 2007 and 2009. The archival data had 473 adolescents complete measures at a second time point. Results indicated that femininity and anxious expectations of rejection were significantly correlated with co-rumination. However, attachment styles, expectations of rejection, and gender role orientation did not significantly predict co-rumination at a later time point, controlling for gender and Time 1 co-rumination. Consistent with past research, Time 1 co-rumination and gender were significant predictors of co-rumination 9 months later. Based on these findings, intervening with youth, especially girls, prior to adolescence could disrupt co-rumination. Positive social change implications in coaching adolescents to use effective problem-solving may lead to lower co-rumination, which could lessen risk for development of internalizing problems, such as depression and anxiety.

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Dedication

I dedicate this to all my family that came before me.

Acknowledgments

To Dr. Rose, thank you for taking me on this journey. You have been encouraging, responsive, knowledgeable, and let me work through some of the difficulties. I could not have done this without you! I hope to continue working with you. To Dr. Diebold, thank you for being my second member and checking for alignment, clarity, and APA style. To Dr. Galaif, thank you for helping me develop social change.

To my family and friends, thank you for being there for me and supporting me throughout this next chapter of school. I think I may be done with school now!

To Kyle, you have made this possible by living through this daily with me. You have given me the space to learn and grow while also being there to pick up some of the slack. I appreciate your love of me and our children to get us through this together. Thank you.

To Lennon, I won't need to answer your question of "are you doing homework, again?!" I started this program after you would go to bed each night. I have loved holding you while I write, and you were always there to give me a hug.

To Hayes, you were growing in me during my coursework, and I started my dissertation 1 week after you were born. Your smile when you walk to see what I am writing about brought me so much joy.

We can do hard things!

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Chapter 1: Introduction to the Study

Co-rumination is the repeated discussion and revisiting of problems with another person and has been documented in adolescents' friendships (Rose, 2002). When co-rumination is present in friendships, there is an increase in friendship quality but also an increase of depression and anxiety symptoms (Homa & Chow, 2014; Rose et al., 2007). While the consequences of co-rumination are clear, predictors of co-rumination are not often studied and not well understood yet. Predictors of co-rumination may include the attachment relationships with parents (Bowley, 1948), the response to perceived rejection (i.e., rejection sensitivity; Downey & Feldman, 1996) and gender role orientation (i.e., the degree to which individuals are characterized by feminine or masculine traits; Boldizar, 1991).

Adolescent friendships play an important role for emotional development with increases in support in friendships in middle and later adolescence (Borowksi et al., 2018; De Goede et al., 2009). Understanding what predicts co-ruminative behavior may help stop co-rumination before it occurs. This current study is important because it may lead to prevention and intervention programming in the context of friendship support to assist adolescents with social and emotional development which can then be extended to future relationships. Through Walden University's mission of positive change, this quantitative study aligned with promoting social change within systems. Positive social change can be expected through the studying of the predicting factors in co-ruminative behavior by beginning at an individual level of counseling and leading to family systems with the introduction of family therapy to help alter insecure attachment styles. This chapter includes the following topics:

- background
- problem statement
- purpose
- research questions and hypotheses
- theoretical framework
- nature of the study
- definitions
- assumptions, delimitations, limitations
- summary

Background

Since the development of the co-rumination construct almost 20 years ago (Rose, 2002), the construct has received considerable empirical attention. Aspects of co-rumination in youths' friendships that have been studied include the frequency of co-rumination, gender differences in co-rumination, and the emotional adjustment correlates of co-rumination (e.g., Rose, 2002). However, factors that predict co-rumination have not been studied in depth. Three possible predictors are considered in this present study.

One possible predictor of co-rumination may be attachment style with parents, characterized by *secure, dismissing*, and *preoccupied* styles (Furman et al., 2002). Attachment is formed during infancy and guides future relationships, including with

friends (Lieberman et al., 1999; Shomaker & Furman, 2009). Associations between the three attachment styles and co-rumination were considered in the present study.

Second, there are two types of rejection sensitivity which may impact whether an individual would tend to co-ruminate. The two types of rejection sensitivity are an *angry expectation* or *anxious expectation of rejection* (Downey & Feldman, 1996). Adolescents who are rejection sensitive expect interpersonal rejection and feel either intense anger or anxiety about the possibility or presence of rejection (Downey & Feldman, 1996). Rejection sensitivity has previously been linked with functioning in friendships (Goldner et al., 2019). Angry and anxious expectations of rejection may each be associated with co-rumination.

Third, gender role orientation and the association with co-rumination was examined. Gender role orientation are gender roles which are characterized by *feminine traits* or *masculine traits* (Boldizar, 1991). Femininity (traits associated with girls and women) and masculinity (traits associated with boys and men) have been associated with coping strategies such as rumination (repetitively thinking; Blanchard-Fields et al., 1991; Nolen-Hoeksema, 1991) and so may also be associated with co-rumination.

Aspects of co-rumination have previously been studied throughout the past 20 years. However, aspects of co-rumination prior to co-rumination occurring have not been well studied. There is some evidence that attachment style may be a predictor of co-rumination (Homa et al., 2014), but this relation is not yet fully understood. Rejection sensitivities (angry or anxious) and gender role orientation (masculinity and femininity) have not been considered as factors that may predict co-rumination. The current study determined factors that may lead to co-ruminative behaviors over time. The gap in

literature demonstrated that predicting factors of co-rumination over time have yet to be studied. This study can lead to positive social change. If factors that precede co-rumination can be identified, then intervention can happen with those factors. Interventions can be developed that address individual counseling and family therapy, which could be used to alter insecure attachment styles. Counseling and broader school programs could be aimed at reducing rejection sensitivity and fostering positive gender roles among youth.

Problem Statement

Co-rumination refers to talking excessively about problems and revisiting the same problems repeatedly with a relationship partner, such as a friend (Rose, 2002). Co-rumination can happen in any close relationship but has received the most empirical attention in youths' friendships. Adolescent friendships have important implications for psychological adjustment including emotional adjustment (Rose, 2002). In particular, co-rumination in friendships is related to depressive and anxiety symptoms (Rose et al., 2014; Spendelow et al., 2017). Co-rumination has been studied for the past 20 years, and now the research is being pushed forward by considering what factors may lead to the behaviors of co-rumination. As the discipline of developmental psychology considers adolescent growth, then studying factors that may predict co-rumination may help researchers and practitioners better understand adolescent friendships.

As co-rumination is a predictor of depression and anxiety, it would be beneficial to understand what factors predict co-rumination in adolescence in order to intervene with the predicting factors before co-rumination occurs (Rose, et al., 2017). Despite growing knowledge about co-rumination, little is known about the predictors related to

adolescents' tendency to co-ruminate. This study examined whether attachment styles, rejection sensitivity, and gender orientation are associated with adolescents' co-ruminating in same-sex friendships. Each of these variables are available in a data set collected by Rose in 2007 and 2009 and were used in the current study.

Purpose of the Study

The purpose of this quantitative study was to investigate factors that predicted co-rumination in same-sex adolescent friendship dyads. The data set collected by Rose in 2007 and 2009 that was used in the current study included participants who were seventh or 10th grade students. These participants were assessed at two time points, approximately 9 months apart. To address the problem statement, the current study used a quantitative approach with the secondary data and considered possible predicting factors of co-rumination, attachment styles (secure, dismissing, and preoccupied attachment styles), expecting rejection (angry expectations or anxious expectations of rejection), and gender orientation (masculinity and femininity). The possible predictors and co-rumination were assessed at the initial assessment, and co-rumination was assessed at a second time point approximately 9 months later at the second assessment. Whether the predictor variables collected at Time 1 are associated with co-rumination collected at Time 2 over a 9-month period (while controlling for Time 1 co-rumination) were tested. Analyses were completed using SPSS.

Research Questions and Hypotheses

RQ1: To what extent do attachment styles assessed at Time 1 (i.e., secure, dismissing, preoccupied) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

H_o1: Attachment style measured by the Behavioral Systems Questionnaire (BSQ; i.e., secure, dismissing, and preoccupied styles; Furman et al., 2002) do not predict Time 2 co-rumination measured by the Co-Rumination Questionnaire (CRQ; Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a1: One or more of the attachment variables (secure, dismissing, preoccupied) as measured by the BSQ predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

RQ2: To what extent do rejection sensitivities assessed at Time 1 (angry and/or anxious expectations of rejection) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$2: Neither of the variables of rejection sensitivity (angry and/or anxious expectations of rejection) measured by the Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996) predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a2: The variables of rejection sensitivity (angry and/or anxious expectations of rejection) measured by the RSQ predicts Time 2 co-rumination measured by the CRQ, while controlling for Time 1 co-rumination and gender.

RQ3: To what extent do gender role orientations assessed at Time 1 (masculinity and femininity) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$3: Neither of the variables of gender role orientation (masculinity and femininity) measured by the Children's Sex Role Inventory (CSRI; Boldizar,

1991) predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a3: One or both of the variables of gender role orientation (masculinity and femininity) measured by the CRSI predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

RQ4: To what extent are there gender differences in the study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity)?

$H_0 4$: There are no gender differences in the study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity).

$H_a 4$: There are gender differences in one or more study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity.)

RQ5: To what extent does gender moderate the relationships between attachment styles assessed at Time 1 (i.e., secure, dismissing, preoccupied) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0 5$: Gender does not moderate the relationship between any of the three attachment styles and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

$H_a 5$: Gender does moderate the relationship between one or more of the three attachment styles and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

RQ6: To what extent does gender moderate the relationships between rejection sensitivities assessed at Time 1 (i.e., angry and anxious expectations of rejection) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$6: Gender does not moderate the relationship between either of the two rejection sensitivity variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a6: Gender does moderate the relationship between at least one of the two rejection sensitivity variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

RQ7: To what extent does gender moderate the relationships between gender role orientations assessed at Time 1 (masculinity and femininity) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$7: Gender does not moderate the relationship between either of the two gender role orientation variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a7: Gender does moderate the relationship between at least one of the two gender role orientation variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

RQ8: What is the best model of the combined and relative effects of the three attachment style variables, the two rejection sensitivity variables, the two gender orientation variables, gender, and the seven two-way interactions with gender in accounting for variance in Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

Theoretical Framework for the Study

There are multiple theoretical frameworks that this study is based on, including response styles theory, attachment theory, rejection sensitivity theory, and gender role orientation theory. First, the overarching theoretical framework that this study is based on is the response styles theory developed by Nolen-Hoeksema (1991). The response styles theory focuses on the way people respond to distress or distressing events by ruminating or distancing themselves. The ruminative response to depression is described as focusing repetitively on one's depressive symptoms (Nolen-Hoeksema, 1991). Building on response style theory, the construct of co-rumination was developed (Rose, 2002). Co-rumination refers to talking about problems and associated negative affect repetitively in the context of a relationships. The goal of this study was to identify predictors of co-rumination.

The first research question focused on the potential relation between attachment style and co-rumination. Accordingly, Bowlby's (1969) maternal deprivation theory is relevant. This theory evolved into an attachment theory that proposed that a person's relationship with their primary caregivers impacts the relationships the child has throughout their life. Bowlby further proposed that children's attachment influenced their expectations of whether their needs will be taken care of or will be rejected in future relationships. Children with *secure attachments* have more favorable outcomes. The development of attachment theory was expanded by Ainsworth (1982) with an updated definition of secure attachment in which children are satisfied with the attention received from the primary caregivers. Children with an *insecure attachment style* (such as

dismissing attachments and preoccupied attachments, considered later in the current study) have caregivers who are less responsive (Ainsworth, 1982).

The second research question focused on the potential association between rejection sensitivity and co-rumination. Rejection sensitivity theory proposes that early experiences of rejection can promote expectations of rejection later in life, which can impact interpersonal relationships (Downey & Feldman, 1996). Individuals who have low rejection sensitivity respond non-defensively in social interactions and have limited expectations that rejection will occur. In contrast, two types of rejection sensitivity have been identified, angry and anxious expectation of rejection. Angry expectations of rejection are likely to lead to negative behaviors such as aggression (Purdie & Downey, 2000). Individuals with anxious expectations of rejection tend to avoid social situations and display worry (Downey & Feldman, 1996).

The third research question focused on the potential association between gender role orientation and co-rumination. For this research question, gender schema theory (Bem, 1974) is relevant. Bem proposed that individuals can be characterized by masculine and/ or feminine traits. A masculine orientation has defining characteristics such as “aggression,” “dominant,” “has leadership qualities,” and “self-sufficient.” A feminine orientation includes characteristics such as “childlike,” “gentle,” “loyal,” “sympathetic,” and “understanding.” Although the findings are not completely consistent, women often score higher than men on communal traits and lower on instrumental traits (Bozionelos & Bozionelos, 2003).

The fourth through seventh research questions considered the roles of gender. For the fourth question, gender differences in co-rumination and the other study variables

(secure, dismissing, preoccupied attachment; angry rejection expectations and anxious rejection expectations; masculinity and femininity) were tested. Girls have been found to co-ruminate more than boys in past research (e.g., Rose, 2002; Homa et al., 2014). The same gender difference was expected in the current study. Gender differences were tested for attachment (secure, dismissing, and preoccupied styles), rejection sensitivity (angry and anxious expectations) and gender role orientation (femininity and masculinity). For the fifth through seventh questions, the moderating role of gender was examined with respect to the relationships between Time 2 co-rumination and attachment styles (secure, dismissing, preoccupied), rejection sensitivity (angry expectations of rejection and anxious expectations of rejection), and gender role orientation (masculinity and femininity), each while controlling for Time 1 co-rumination.

Nature of the Study

This study used a quantitative approach to answer the research questions. Data collected by Rose in 2007 and 2009 were used for the current study with permission from Rose (who was also the chair of the committee). This data set is described in Rose et al. (2014) and Rose et al. (2016); these studies addressed different research questions with the data set to be used for the current study. The data set for the current study (collected by Rose in 2007 and 2009) included pairs of same-sex friends in seventh grade or in 10th grade. The following procedure was used for recruitment: names of eligible students were drawn from a public-school roster and then contacted by letters and telephone calls. The final sample of participants were 628 adolescents in 314 same-sex friend dyads, including 157 seventh-grade dyads (80 girl and 77 boy dyads) and 157 tenth-grade dyads (83 girl

and 74 boy dyads). Participants in this data set responded to questionnaires at two datapoints, separated by 9 months.

The data for the current study were survey responses provided by each youth in the same-sex friend dyads. The surveys each youth responded to included the CRQ (Rose, 2002), the BSQ (which assesses attachment; Furman et al., 2002), the RSQ (Downey & Feldman, 1996), and the CSRI (which assesses masculinity and femininity; Boldizar, 1991). Each of these measures have been demonstrated to be reliable and valid.

For the initial 2007 and 2009 data collection conducted by Rose, parental consent and youth assent were obtained, and the data were kept confidential. The original research required documentation of participant names and identification numbers to be able to track data over time. However, the names were replaced with identification numbers in the data set shared by Rose for the current study.

Definitions

Adolescent: people between 10 and 19 years of age (World Health Organization, 2014)

Anxious rejection sensitivity: anticipating rejection and responding to rejection in a nervous or anxious manner (Downey & Feldman, 1996; Goldner et al., 2019)

Attachment (construct): the affective bond between caregivers and their children that forms because caregivers provide warmth and care (Bowley, 1948; Bruce & Freeman, 1942)

Variables: In the present study, three attachment variables are assessed: secure attachment, dismissing attachment, and preoccupied attachment (assessed with the BSQ; Furman et al., 2002).

Angry rejection expectations: anticipating rejection and responding to rejection in an angry manner (Goldner et al., 2019)

Co-rumination (construct and variable): repeated discussion of problems and revisiting problems with another person that is characterized by speculation about problems and dwelling on negative affect (Rose, 2002)

*Variabl*e: In the present study, a single variable will be used to represent co-rumination (assessed with the CRQ; Rose, 2002).

Dismissing insecure attachment style: the style involves downplaying the significance of interpersonal relationships (Furman et al., 2002)

Feminine traits: characteristics that were historically associated with girls and women such as being affectionate and sympathetic (Boldizar, 1991; Helgeson, 1994)

Gender role orientation (construct): gender roles; namely the degree to which individuals are characterized by feminine or masculine traits (Boldizar, 1991)

Variables: In the present study, two gender role orientation variables are assessed: masculinity and femininity (assessed with the CSRI, Boldizar, 1991).

Masculine traits: characteristics that were historically associated with boys and men such as dominance and ambition (Boldizar, 1991; Helgeson, 1994)

Preoccupied insecure attachment style: the style involves feeling confused, angry, or preoccupied with experiences in relationships (Furman et al., 2002)

Rejection sensitivity (construct): anticipating rejection and responding defensively (either with anger or with anxiety) to the possibility of rejection (Downey & Feldman, 1996)

Variables: In the present study, two rejection sensitivity variables are assessed: angry expectations and anxious expectations of rejection (assessed with the RSQ; Downey & Feldman, 1996).

Secure attachment style: relationship style that involves feeling that needs are met and will be met in future relationships (Furman et al., 2002)

Assumptions

The following assumptions were made regarding the study:

- Adolescent pairs who participated in the study accurately identified themselves as best or close friends.
- Adolescents who participated in the study are representative of adolescents beyond the current sample (at least to youth from similar geographic regions).
- The adolescents who participated in the study were truthful in the completion of the survey measures and were honest in their reporting (did not over report only positive or negative responses).
- The adolescents who participated in the study understood the questions that were being asked.

Scope and Delimitations

The research problem indicated that there are possible predictors of co-rumination in adolescence that have yet been identified. Threats to internal validity have to be taken into consideration to ensure that the variables that are studied can lead to the appropriate conclusions (Creswell & Creswell, 2018). Instrumentation can be a major threat to internal validity; however, this study used reliable and valid measures. In terms of external validity, careful consideration of generalizability needs to be taken into account.

The data were collected in Columbia, Missouri in 2007-2009 and are likely generalizable at least to youth from other mid-sized Midwestern towns.

Limitations

Ethical procedures including consent and confidentiality were especially important because participants were minors (Creswell & Creswell, 2018). I was not present to document consent and confidentiality procedures. However, the IRB application submitted by Rose, which was approved by the University of Missouri, was reviewed. According to the approved application, both parental consent and child assent were obtained from each participant. To address concerns with confidentiality, names were collected as part of the original data collection but were replaced by identification numbers in the data set provided by Rose, which then made the data anonymous and minimized possible self-report bias.

Limitations regarding the participants of the data were considered. The data set that was collected by Rose during 2007 and 2009 used sampling from public school rosters where the names were selected randomly except for oversampling of African American youth. Participants did not attend other school settings such as a private school, charter school, or a homeschool program.

Significance

Walden University (2017) strives to facilitate social change locally and globally. The current study of quantitative research study aligned well with Walden's mission of social change by advancing knowledge in the area of developmental psychology with the sampling of adolescents who identify a same-sex best friend. By considering the implications of adolescents' attachment styles (dismissing, preoccupied, and secure

styles), rejection sensitivity (angry and anxious expectations), and gender role orientation (masculinity and femininity) for later co-rumination, prevention and intervention programs can be created to support social and emotional development. For example, such programs could intervene at the level of the predictors (e.g., rejection sensitivity) and, therefore, reduce the risk of depressive symptoms. Prior to adolescents forming friendships, social change can occur in several ways. Given that one factor expected to predict co-rumination involves attachment with parents, intervention could happen at the level of the family system to support the development of a secure attachment style. Interventions to lower rejection sensitivity and expectations of gender role orientation can be implemented at the individual level or through a school level program. By understanding the predicting factors of co-rumination, programming may be developed to help adolescents form adaptive friendships.

Summary

Chapter 1 introduced the problems associated with co-rumination in adolescence along with possible predictors of co-ruminative behavior. In recognizing the gap in the literature, a quantitative study had been introduced that considered the potential associations of adolescents' attachment styles (dismissing, preoccupied, and secure styles), rejection sensitivity (angry and anxious expectations), and gender role orientation (masculinity and femininity) collected at Time 1 with co-rumination at Time 2 (while controlling for 1 co-rumination and gender). The current study is built on well-accepted theoretical frameworks including response styles theory, attachment theory, rejection sensitivity theory, and gender role orientation theory. The results of the study could

contribute to social change in that they could inform prevention and intervention efforts aimed at strengthening adolescents' future relationships and well-being.

Chapter 2 is a review of the literature including an extensive review of the theories that ground the study along with a discussion of the importance of adolescent friendships.

In Chapter 3, the research design is explained along with the rationale of each variable's inclusion to the study.

Chapter 4 will present the results of secondary data analyses.

Chapter 5 will present the results with the interpretation using the theoretical framework, and future research recommendations will be presented.

Chapter 2: Literature Review

Co-rumination, defined as the repeated discussion of problems and revisiting problems with another person, has been found to have an impact on the psychological adjustment of adolescents (Rose, 2002). The impact can be positive in that an adolescent who engages in co-rumination receives support due to increases in friendship quality (Homa & Chow, 2014; Schwartz-Mette & Smith, 2018; Shomaker & Furman, 2009; Smith & Rose, 2011). However, there are negative implications when co-rumination is present in adolescent friendships including an increase in internalizing problems such as depression and anxiety (Rose et al., 2017). Despite this information about the consequences of co-rumination, predictors of co-rumination are rarely studied and are not yet well understood.

The purpose of this study is to explore predictors of co-rumination in adolescents' same-sex friendship. For this study, data collected by Rose in 2007 and 2009 was used. Participants in Rose's data collection completed measures at two time points (approximately 9 months apart). For the current study, the data were used to examine whether attachment styles (dismissing, preoccupied, and secure styles), rejection sensitivity (angry and anxious expectations), and gender role orientation (masculinity and femininity) collected at Time 1 predict Time 2 co-rumination (while controlling for Time 1 co-rumination and gender). Multiple theories help explain why those variables were included as potential predictors of co-rumination.

This chapter includes the following topics:

- literature search strategy that was used
- response styles theory

- trade-offs theory of sex-typed behavior
- attachment theory
- rejection sensitivity theory
- gender role orientation theories
- review of research related to co-rumination with implications for relations with attachment style, rejection sensitivity, and gender role orientation

Literature Search Strategy

In searching through the literature, I searched through multiple databases of peer-reviewed journals and books. The databases included EBSCO, PsycINFO, and ProQuest Dissertations and Theses. Effort was made to find seminal work as well as meta-analyses and empirical articles. Initially, the search included the topics of *co-rumination*, *attachment, rejection sensitivity,* and *gender role orientation*, which ranged in date from 1969 to 2019. The search then became broader to include the following terms: *adolescence, friendship, rumination, masculinity, femininity, response styles theory, trade-offs theory of sex-linked behavior, attachment theory, rejection sensitivity theory*, and *gender role orientation theory.* I found authors that contributed to seminal work with the key words as Bowlby, Ainsworth, Nolen-Hoeksema, Rose, Downey, and Bem.

Theoretical Foundations

There are five theories that can be used to form hypotheses regarding potential predictors of co-rumination including the response styles theory, trade-offs theory of adjustment, attachment theory, rejection sensitivity theory, and gender role orientation theory. Each of these theories are described in the subsequent sections.

Theories Related to the Co-Rumination Construct

Response Styles Theory

Nolen-Hoeksema (1991) developed the response styles theory. According to response styles theory, there are multiple possible responses to stressful events and negative feelings, including having a ruminative response or a distracting response. Ruminative responses are those responses that are automatic and involuntary. The ruminative responses are not controlled and are a response to stress (Nolen-Hoeksema, 2000). The distracting response is when someone thinks positive or neutral thoughts or engages in positive or neutral activities. Distracting responses can include being with friends or engaging in a hobby. Conceptually, rumination was proposed to be related to depressive symptoms and distracting responses to be related to lower depressive symptoms (Nolen-Hoeksema, 1991). The response style theory suggests that ruminative responses are related to depressive symptoms because the negative thinking can lead to difficulty problem-solving and can extend the duration of depressed symptoms (Nolen-Hoeksema, 2000).

The construct of co-rumination builds on the response styles theory. As noted, co-rumination refers to discussing problems extensively with another person and involves focusing on negative thoughts associated with personal problems (Rose, 2002). Rumination and co-rumination are similar in their focus on negative thoughts. Accordingly, like rumination, co-rumination also is expected to be related to depressive symptoms due to its perseverative negative focus.

Trade-offs Theory of Sex Typed Behavior with Peers

Rose and Rudolph (2006) proposed the trade-offs theory, which builds on differences between boys and girls in friendships. Girls are found to have closer friendships but greater emotional problems, including depression and anxiety, than boys, whereas boys have more externalizing problems, such as behavioral problems like aggression, than girls (Rose & Rudolph, 2006). The trade-offs theory proposed that girls' peer relationship styles (e.g., high in empathy, disclosure, support) lead to closer relationships but also create risk for emotional problems, whereas boys' peer relationship styles (e.g., activity focused, lower on personal disclosure) protect from emotional problems but interfere with close relationships and create risk for behavioral/ externalizing problems (Rose & Rudolph, 2006). Co-rumination is an example of the trade-offs theory in that co-rumination (which occurs more frequently among girls than boys) is proposed to be related to both high-quality close friendships but also internalizing symptoms such as depression and anxiety.

Theories Related to Potential Predictors of Co-Rumination

Attachment Theory

Bowlby (1969/1982, 1973, 1980) was a leader in the development of attachment theory, originally referred to as maternal deprivation theory. According to this theoretical perspective, caregivers are critical to children's development not only because they provide food but also due to the affective/ emotional relationship that develops because the caregiver also provides the child with warmth and care (Bowley, 1948; Bruce & Freeman, 1942). Initially, attachment relationships were considered to occur specifically between mothers and children, but later it was recognized that fathers and other

caregivers also form attachment relationships with children (Doyle et al., 2009). Importantly, the nature of the attachment relationship is proposed to impact the child's development (Jones et al., 2018). Secure attachments are proposed to lead to positive personal and interpersonal outcomes. In contrast, having an insecure attachment is proposed to be related to problematic personal and interpersonal outcomes.

Ainsworth and Bell (1970) developed an experimental paradigm, called the Strange Situation, to observe attachment behaviors of 1-year-olds. The Strange Situation involves eight different episodes (Ainsworth & Bell, 1970). These episodes include a series of separations and reunions between the child and caregiver, as well as interaction with a stranger both with and without the caregiver present. Three theoretical principles guide how the Strange Situation is used to assess secure attachment (Ainsworth & Bell, 1970). First, children use their caregiver as a "secure base." This means that the child can explore freely and come back to the caregiver if needed. When the caregiver is present, a child using the caregiver as a secure base appears more confident while exploring the Strange Situation environment. Second, children tend to demonstrate some distress, or at least lower quality play, when the caregiver is not present. While the mother is absent, the child displays crying and looking for her (proximity-promoting behaviors). Third, children approach the mother and gesture for her when the mother returns after a separation, and they can be soothed by her (Ainsworth & Bell, 1970).

The Strange Situation can then be used to classify children. Children who do use caregivers as a secure base, show distress in their absence, and are soothed on their return are classified as having a *secure* attachment. Other infants were classified as having one of two types of insecure attachment. Infants who showed some signs of anxiety and

demonstrated intense distress when separated and when reunited are classified as having an *ambivalent insecure attachment* due to looking for close contact with the mother but not being soothed by her when she returns (similar to the construct of preoccupied attachment considered in the current research; Ainsworth, 1979). The third group of infants were classified as having an *avoidant insecure attachment* due to rarely crying when the mother left and avoiding and often ignoring the mother when she returned (similar to the construct of dismissing attachment considered in the current study; Ainsworth, 1979). Similar attachment categories have been observed in other studies using the Strange Situation; for example, in other research, a group similar to the *ambivalent attachment* group was labeled as having an *angry/resistant attachment* (Cassidy, 1986).

Based on infants' attachments, Bowlby (1969/ 1982) further proposed that children develop internal working models that impact future relationships. Internal working models of attachment can be defined as a set of rules (conscious or unconscious) that help to organize information about relationships that develop in response to the relationship with the caregiver (Main et al., 1985). Bowlby (1969/1982) proposed that children who had a secure attachment were likely to develop a secure internal working model and would expect that future relationships would be supportive and accepting. Children with insecure attachments were expected to develop less positive internal working models.

The consolidation of the constructs of attachment and internal working models led to the assessment of related relationships styles in adolescent and adulthood (Furman & Wehner, 1997; Hazan & Shaver, 1987). Furman and Wehner (1999) proposed that

adolescents' and adults' conscious representations of attachment could be assessed as *secure, dismissing,* and *preoccupied* styles. Dismissing attachment styles are similar to avoidant insecure attachment assessed in childhood. The preoccupied attachment style is similar to the ambivalent insecure attachment and angry resistant insecure attachment assessed in childhood. In the current study, the relationships between *secure, dismissing,* and *preoccupied* styles and co-rumination are examined. In the data to be used in the present study, attachment styles with *parents* were assessed rather than assessing attachment styles with *mothers* and *fathers* separately. This attachment approach is not ideal, as different attachment styles can emerge with mothers and styles (Freeman & Brown, 2001); however, attachment styles with mothers and fathers are positively correlated (Umemura et al., 2018), and these are the data available for the project.

Rejection Sensitivity Theory

Downey and Feldman (1996) developed the rejection sensitivity theory. The rejection sensitivity theory focuses on individuals' reactions to being interpersonally rejected, or to the possibility of being rejected. Downey and Feldman proposed that when a child's needs are met with rejection from parents, the child is likely to become rejection sensitive. Downey and Feldman considered individuals to be high on rejection sensitivity if they expect defensively to be rejected, easily perceive rejection, and overreact to rejection. Rejection sensitivity is viewed on a continuum; everyone expects or fears rejection at some point, but not everyone develops excessive feelings of rejection sensitivity (Purdie & Downey, 2000). Rejection sensitivity can have an important impact on interpersonal relationships (Downey & Feldman, 1996).

Individuals low in rejection sensitivity have a non-defensive response to social interactions, are optimistic, and expect that there is a low likelihood that rejection will occur (Downey & Feldman, 1996). Individuals high in rejection sensitivity expect, either angrily or anxiously, to be rejected in social situations more often than do others (Downey & Feldman, 1996). When angry expectations of rejection are compared to anxious expectations of rejection, angry expectations are more likely to lead to negative behaviors such as aggression (Purdie & Downey, 2000). Individuals with anxious expectations tend to avoid social situations (Downey & Feldman, 1996). Downey and Feldman proposed that individuals with angry rejection expectations or anxious expectations of rejection respond defensively to even perceived or possible rejection (e.g., when the rejection is ambiguous), meaning that if a rejection sensitive child even suspects the possibility of rejection, then they may overreact or respond with a hypervigilance towards possible rejection. The constructs of angry rejection expectations and anxious expectations of rejection are examined in this study.

Gender Role Orientation

Theories regarding gender roles focus on characteristics that are considered "masculine" or "feminine." Historically, particular personality traits were more common among men or women, and some of these gender differences remain today (Burger et al., 1942). Based on these differences, people develop schemas that certain characteristics are associated with men or women, and these traits are thought of as masculine or feminine traits (Bem, 1981). This happens even though there are many individual cases in which men have traits perceived as "feminine" and women have traits perceived as "masculine."

Individuals also develop their own gender role orientation, or the degree to which they think of themselves as characterized by feminine or masculine traits. Personality traits associated with girls and women include being affectionate and sympathetic, and personality traits associated with boys and men include dominance and ambition (Boldizar, 1991). Notably, Bem's (1974) gender role orientation theory adopted the perspective that individuals could be high on masculine traits, feminine traits, or both. Individuals who were characterized by high level of masculine traits and low levels of feminine traits were deemed "masculine," and individuals who had high levels of feminine traits and low levels of masculine traits were deemed "feminine." Although the findings are not completely consistent, women often score higher than men on feminine traits and lower on masculine traits (Bozionelos & Bozionelos, 2003). Masculinity and femininity are examined in the current study.

Literature Review

Adolescent Friendships

The importance of adolescent friendships has long been emphasized (Allen et al., 2019; Parker et al., 2006; Rubin et al., 1998). Friends, especially during adolescence, play a vital role for development including emotional development (Borowski & Zeman, 2018; Vitaro et al., 2009). For example, there is a higher sense of well-being among adolescents who have friends than those who do not have friends (Hartup & Stevens, 1997; Spithoven et al., 2017). Longitudinal research also has demonstrated that friendships during middle adolescence take on more of a supportive role for both boys and girls when compared to early adolescence (Borowski et al., 2018; De Goede et al., 2009; Maccoby, 1990). During adolescence, self-disclosure between friends increases

with age and can promote higher levels of emotional intimacy (Bauminger et al., 2008; Rose et al., 2007; Vijayakumar & Pfeifer, 2020).

Same-sex friendships, in particular, are central in the lives of adolescents. Adolescents interact more frequently with same-sex peers than opposite-sex peers (Bukowski et al., 1993; Dickson et al., 2018; Kovacs et al., 1996). Youth play more frequently in same-sex groups than mixed-sex groups and have higher compatibility than in heterogenous groups (Connolly et al., 2015; Maccoby, 1990). Although same-sex friendships play an important role in the lives of both boys and girls, girls perceive that their friendships are more supportive than boys (Cuadros & Berger, 2016; De Goede et al., 2009). Girls also report closer friendships than do boys (Rose et al., 2016; Rose et al., 2007). Boys tend to focus on competition and dominance as early as preschool age, which also is present in adolescence (Maccoby, 1990; Shin, 2017).

As stated, there are clear positive adjustment outcomes related to adolescents' friendships. However, negative behaviors also can be present in adolescents' friendship, such as overprotection, conflict, and co-rumination (Etkin & Bowker, 2018; Vannucci et al., 2018). For example, as described in the following section, although co-rumination is linked with friendships being close and of high quality, a meta analysis indicated co-rumination also is linked with depressive and anxiety symptoms (Spendelow et al., 2017; see e.g., Rose, 2002).

Rumination, Co-Rumination, and Internalizing Symptoms

As described previously, the response style theory (Nolen-Hoeksema, 1991), involves rumination, which is defined as focusing on negative thoughts repetitively or dwelling on one's own symptoms of depression. Notably, rumination can be present in

youth as well as in adults. For example, rumination has been found to present as early in the third grade (Felton et al., 2013; Rose, 2002). Rumination may be associated with depression and anxiety symptoms in part because ruminative thinking can interfere with coping mechanisms (Rose, 2014; Shapero et al., 2013). In terms of empirical support, over a 5-month period, adolescents who ruminated also had increasing symptoms of both depression and general internalizing symptoms (Hankin, 2008; Hilt et al., 2019; Shin, 2017). In another study of adolescents, rumination predicted psychological distress over a 2-year period. (Mazzer et al., 2019).

The construct of co-rumination was developed based on the construct of rumination. Rumination and co-rumination have differences but also similarities. Co-rumination refers to talking excessively about issues in a repetitive way with a relationship partner, such as a friend (Rose, 2002; Rose et al., 2016). Co-rumination differs from rumination in that co-rumination has the social component of ruminating with someone else; however, co-rumination and rumination are similar in that they both involve consistent negative focus (Nolen-Hoeksema, 2000; Rose et al., 2007, 2016). Similar to rumination, co-rumination also is associated with internalizing symptoms (Hankin et al., 2010; Rose, 2002; Rose et al., 2005; Schwartz-Mette & Smith, 2018; Smith & Rose, 2011; Tompkins et al., 2011).

Co-rumination can occur in any dyadic relationship, but research primarily has focused on co-rumination in youths' friendships (Rose, 2002; Schwartz-Mette & Smith, 2018). Co-rumination is typically assessed using the CRQ (Rose, 2002). The CRQ (Rose, 2002) typically is used to create a single score which is based on items assessing

frequency of discussing problems, discussing the same problem repeatedly, mutually encouraging problem talk, speculation about problems, and focusing on negative feelings.

Self-Disclosure, Co-Rumination, and Friendships

Self-disclosure involves sharing information about oneself with another person, which also can lead to an increase in closeness over time (Bauminger et al., 2008; Rose et al., 2016). Self-disclosure is related to positive feelings in friendships (e.g., closeness) and high-quality friendships (Bauminger et al., 2008; Parker & Asher, 1993; Vijayakumar & Pfeifer, 2020). Within adolescent friendships, self-disclosure can serve as a buffer against negative feelings in friendships (Smith & Medvin, 2016).

Co-rumination is similar to self-disclosure due to the nature of sharing information about ones' self to another person. However, co-rumination is different in that it is more extreme and more negatively focused than self-disclosure (Rose, 2002). Co-rumination, like self-disclosure, is expected to be associated with positive aspects of friendships due to sharing information socially (Rose, 2002).

In fact, empirical studies indicate co-rumination is related to positive aspects of relationships (e.g., feelings of closeness, positive relationship quality; Felton et al., 2019; Homa & Chow, 2014; Schwartz-Mette & Smith 2018; Shomaker & Furman, 2009; Smith & Rose, 2011). Increased intimacy fostered by co-rumination may help to explain these findings.

Considering Predictors of Co-Rumination

Given that co-rumination is related to adjustment, including emotional adjustment and adjustment in friendships, knowing what factors predict co-rumination is important (Rose et al., 2016). In the present study, predictors considered included attachment style

(dismissing, preoccupied, and secure attachment), rejection sensitivity (angry rejection expectations and anxious rejection expectations), and gender role orientation (masculinity and femininity).

Attachment and Co-Rumination

Conceptually, secure attachments should be expected to give youth skills (e.g., communication skills) that can be used in future relationships. In fact, the relationship between attachment style and behavior and experiences in youths' friendships have been demonstrated in multiple studies. For example, a review of literature found individuals with insecure attachments to parents, experience especially high interpersonal stress in the context of friendships as compared to youth with secure attachments (Hankin et al., 2005; Zimmer-Gembeck et al., 2017). As another example, secure attachment relationships impacted children to have a positive affect compared to a negative affect of those with an insecure attachment (Cooke et al., 2019) Another study found that over a period of two years, children's insecure attachment toward their father, assessed by the Relationship Questionnaire (Bartholomew & Horowitz, 1991) led to insecurity with a best friend (Doyle et al., 2009). Breinhost et al. (2019) found that insecure attachment to fathers may increase anxiety in the child. The gap in literature is further demonstrated in that additional studies of relational styles found that adolescents with a secure style had stronger communication skills in friendships and youth with a dismissing insecure style had weaker communication with friends and more difficulty problem solving as compared to those with a secure style (Shomaker & Furman, 2009).

Previous studies indicate that youths' attachment styles are related to a variety of behaviors and experiences in their friendships. The current study considered whether

youths' attachment styles (dismissing, preoccupied, and secure) are related to their co-rumination with friends. Only one previous study was identified that considered associations between youths' attachment styles and co-rumination (Homa et al., 2014). Homa et al. (2014) used the Experiences in Close Relationships (ECR; Brennan et al., 2000) measure which assessed attachment anxiety (how much an individual worries that the attachment figure may not be available or possibly be abandoned; similar to the preoccupied style assessed in the current study) and avoidance (how much an individual remains to be emotionally independent; similar to the dismissing style assessed in the current study). Secure styles were not assessed in the Homa et al. study. Additionally, the Homa et al. researchers found anxious attachment styles were not related to the tendency to co-ruminate; however, participants with avoidant styles were less likely to co-ruminate (Homa et al., 2014).

While Homa et al. (2014) found that one attachment style was related to frequency of co-rumination, there were limitations to this research. First, secure styles were not assessed. In addition, the constructs were assessed at a single time point rather than testing the association between earlier attachment styles and later co-rumination.

In the current study, whether adolescents' attachment styles with parents predicted later co-rumination with friends was tested over time. For the current study, attachment styles were assessed using the BSQ (Furman et al., 2002), which provided scores for *secure, dismissing,* and *preoccupied* styles. Similar to the Homa et al. (2014) study, which found that an avoidant style (similar to a dismissing style), it is hypothesized that adolescents who score high on *dismissing* styles will report low levels of co-rumination. Individuals with a *dismissing* style tend to not be dependent on others and so are unlikely

to engage in long detailed conversations with friends about personal problems (Furman et al., 2002). In contrast, although Homa et al. did not find an association between anxious attachment anxiety (similar to a preoccupied style) and co-rumination, in the current study, adolescents with a preoccupied relational style are expected to be especially likely to co-ruminate. Adolescents with preoccupied styles tend to worry about the reliability of their relationships. Therefore, they may co-ruminate with a friend about concerns with relationships with others and also see co-rumination as a way to strengthen their relationship with the friend. In addition, despite the many positive adjustment correlates of having a secure attachment, adolescents with a secure attachment style also might tend to co-ruminate because of their tendency to invest in close relationships (Shomaker & Furman, 2009).

Rejection Sensitivity and Co-Rumination

In the present study, rejection sensitivity was considered in terms of associations with co-rumination. Implications of rejection sensitivity for youths' peer relationships and friendships more generally have been found in past research (Bowker et al., 2011; Downey & Feldman, 1996; Downey et al., 1998). For example, in one study (Goldner et al., 2019), adolescents with higher angry and anxious expectations of rejection had more conflict in friendships when compared to adolescents who were not rejective sensitive. Angry rejection expectations were related to conflict characterized by more anger and aggression. Anxious expectations of rejection were related to greater compromise but also greater friendship instability (Croft & Zimmer-Gembeck, 2014).

In the present study, the relationship between angry and anxious expectations of rejection and co-rumination were examined. Because angry expectations of rejection are

linked with aggression and other negative behavior; these youth may be unlikely to want to talk with their friend about problems and, instead, use other sorts of reactions to stress (e.g., acting out; Goldner et al., 2019). Predictions are less clear for youth with anxious expectations of rejection. These youth may co-ruminate more about problems due to their elevated levels of worry. However, given that rejection sensitivity was associated with lower intimacy in at least one study (Goldner et al., 2019), then even youth with anxious expectations of rejection may not co-ruminate.

Gender Role Orientation and Co-Rumination

Finally, the study considered associations of femininity and masculinity with co-rumination. In past research, femininity and masculinity have been associated with rumination and other coping strategies. This work has considered problem-focused coping and emotion-focused coping. Problem-focused coping involves taking steps to change or improve a harmful or challenging situation (Renk & Creasey, 2003). Problem-focused coping is related to lower femininity in adolescence but higher masculinity (Blanchard-Fields et al., 1991; Li et al., 2006; Renk & Creasey, 2003). Emotion-focused coping involves trying to adapt emotionally to challenging situations and can include, for example, seeking social support (Renk & Creasey, 2003). Adolescents high in femininity tend to endorse higher levels of emotion-focused coping (Blanchard-Fields et al., 1991; Renk & Creasey, 2003). In addition, in college age students, higher femininity was associated with more rumination, and masculinity was not related to rumination (Conway et al., 1990). However, this current quantitative study hopes to add to the literature regarding gender role orientation and co-rumination in adolescents due to the lack of current research.

In the present study, the relationship between gender role orientation and co-rumination was examined. Given that femininity is associated with emotion-focused coping (which includes support seeking and rumination), femininity was expected to be associated with co-rumination. In addition, co-rumination can involve problem solving, and masculinity is related to problem focused coping. However, given that masculinity is not related to rumination, masculinity may not be associated with co-rumination.

The Role of Gender

Gender differences have been studied in the constructs considered in the current research. In the present study, gender was considered in two ways. The first is whether there were mean-level differences between girls and boys in all constructs considered (co-rumination; secure, dismissing and preoccupied attachment; angry and anxious rejection expectations; masculinity and femininity). The second is whether the associations between the predictors (secure, dismissing and preoccupied attachment; angry and anxious rejection expectations; masculinity and femininity) and co-rumination differ for girls versus boys.

In terms of mean-level gender differences, and consistent with past research indicated that girls participate in co-rumination more than boys (see Rose, 2002; Homa et al., 2014; Li et al., 2006; Schwartz-Mette & Smith, 2018; Smith & Rose, 2011; Tompkins et al., 2011), girls are expected to report greater co-rumination than boys in the current study too.

Research has produced mixed results in terms of gender differences in attachment styles for youth over time. Some studies did not find any gender differences in attachment assessed by the Attachment Style Questionnaire (ASQ; Hazan & Shaver,

1987; Nelis & Rae, 2009). However, other studies indicate girls (Gloger-Tippelt & Kappler, 2016; Pierrehumber et al., 2009) more often had a secure attachment than boys. Boys have reported higher avoidant styles on the Manchester Child Attachment Story Task (similar to dismissing styles; MCAST; Goldwyn et al., 2000; Del Giudice, 2008) and dismissing styles than girls on the Relationship Questionnaire (Bartholomew & Horowitz, 1991 Doyle et al., 2009) and the Behavioral Systems Questionnaire (BSQ; similar to dismissing styles; Furman & Wehner, 1999; Shomaker & Furman, 2009). Girls have reported higher preoccupied styles with the use of the BSA (Del Giudice, 2008; Furman & Wehner, 1999; Milan et al., 2013). Based on these past studies, if gender differences do emerge, girls are expected to report greater secure attachments and preoccupied attachments and boys are expected to report greater dismissing attachment.

There has not been a consensus regarding gender differences and rejection sensitivity in adolescence. At least two studies of adolescents indicated no gender differences in rejection expectation (Croft & Zimmer-Gembeck, 2014; McDonald et al., 2010; Scharf et al., 2014). However, when gender differences are found using the Children's Rejection Sensitivity Questionnaire (CRSQ) in studies that that used a combined score for angry rejection expectations and anxious expectations of rejection (Downey & Feldman, 1996), findings are mixed. Some studies found that girls have greater expectations of rejection than boys (Rowe et al., 2015) and some found that boys have greater expectations of rejection than girls (Marston et al., 2010). Taken together, hypotheses are not put forth regarding gender differences in the current study.

Gender differences in gender role orientation typically are found in adolescents. Historically, multiple studies found masculinity was higher in men, and femininity was

higher in women (Bem, 1974; Galambos et al., 1990; Karniol et al., 1998). More recent studies continue to find gender differences in femininity but the gender gap in masculinity is closing (Rogers et al., 2017; Rogers et al., 2020). For the current study, femininity was expected to be higher in girls than boys. It is not clear whether a gender difference would emerge for masculinity but, if it does, boys are expected to score higher than girls.

Finally, whether the associations of attachment style (secure, dismissing, preoccupied), rejection sensitivity (angry rejection expectations and anxious rejection expectations), and/ or gender role orientation (masculinity and femininity) at Time 1 with co-rumination at Time 2 (while controlling for co-rumination at Time 1 and gender) are moderated by gender was tested. If differences in the associations emerge, they are expected to be stronger for girls. This hypothesis is consistent with other research indicating that, when gender differences in associations between co-rumination and related variables are found, they tend to be stronger for girls than boys (e.g., Rose et al., 2007). The possibility also fits broadly with related research indicating that the relationship between gender role orientation and rumination was stronger for women than men (Conway et al., 1990).

Summary and Conclusions

This chapter reviewed the response styles theory, trade-offs theory of sex-typed behavior with peers, attachment theory, rejection sensitivity theory, and gender role orientation theories in order to conceptualize possible predictors of co-rumination in adolescent friendships. Conceptually, attachment theory, rejection sensitivity theory, and gender role orientation theory each suggest potential relationship of the relevant

construct(s). Literature also was reviewed including many quantitative studies that indicated that attachment styles, rejection sensitivity, and gender role orientations were related to friendships. These studies suggested that attachment styles, rejection sensitivity individuals, and gender role orientations also may be related to co-rumination between friends. As demonstrated, the literature supports the presence of co-rumination but not a thorough look at predicative factors over time, which this quantitative study will consider. The gap in literature is present due to the lack of consideration of what can impact co-rumination in adolescent friendships.

The next chapter will discuss the research method including the research design and rationale, methodology, and threats to validity of how to address the gap in research. The role of gender was considered. Gender differences were tested for the predicting variables (attachment style, rejection sensitivity, gender role orientation) and co-rumination. Lastly, this present study examined whether the relations between the predictor variables and co-rumination differ by gender, which has yet to be studied.

Chapter 3: Research Method

The purpose of this study was to investigate factors that may predict co-rumination in same-sex adolescent friendship dyads. Data collected by Rose in 2007 and 2009 were used in the current study. The participants in the data set were seventh and 10th grade students. In this data collection, there were two assessments approximately 9 months apart. To address the problem statement, the current study used quantitative analyses with these secondary data to test whether attachment (secure, dismissing, preoccupied), rejection sensitivity (angry rejection expectations and anxious rejection expectations), and/ or gender role orientation (masculinity and femininity) collected at Time 1 predict co-rumination at Time 2 (while controlling for Time 1 co-rumination and gender). Analyses were completed using the SPSS program.

This chapter provides an explanation of the research design and methodology used in this study thoroughly enough for replication. The project relies on participants' responses, in the secondary data set, to survey measures. The chapter describes the population and sampling, procedures for data collection, and the instruments that were used. Threats to validity are explained along with ethical procedures that were followed.

Research Design and Rationale

This study used a quantitative research design to address the research questions. A quantitative design is appropriate to test research questions based on theories by examining the relationships among variables assessed with instruments, such as survey measures (Creswell & Creswell, 2018). The design is a longitudinal, nonexperimental study that includes two time points that were approximately 9 months apart. The dependent variable was co-rumination, which was collected at Time 1 and Time 2. The

independent variables were attachment styles (secure, dismissing, preoccupied) rejection sensitivities (angry expectations and anxious expectations), and gender role orientations (masculine and feminine) collected at Time 1. In analyses, Time 2 co-rumination was predicted from the independent variables, while controlling for Time 1 co-rumination and gender.

The use of a quantitative study was determined due to the use of survey measures to collect the data. The use of surveys indicated the participants' attitudes and opinions, which was consistent with the purpose of this study of understanding the factors that may predict co-rumination (Creswell & Creswell, 2018). The research questions considered to what extent various factors may lead to co-rumination at a second time point. A quantitative research design is typical in social sciences when studying the relationship between variables (Creswell & Creswell, 2018). The survey measures that were used to collect the archival data are frequent in the studying of co-rumination and the predicting variables.

Methodology

Population

In the United States, according to the U.S. Census Bureau, there are roughly 41,910,000 youth between the ages of 10 and 19 (U.S. Census Bureau, 2018). The target population for this study included adolescents with a same-sex best friend.

Sampling and Sampling Procedures

The sample in the data set, collected by Rose in 2007 and 2009, were seventh and 10th graders from a midsize town in the Midwestern United States. Adolescents attending the local public school district were recruited for the study. The school provided student

rosters, and names from the rosters were selected randomly, with one exception. Obtaining racial diversity in the sample was important for research questions beyond the scope of this dissertation, and African American youth were oversampled. Otherwise, families to contact were chosen at random from the rosters (Creswell & Creswell, 2018). Recruitment continued until a sample size of approximately 300 youth who would participate with a same sex friend was obtained. Specifically, letters were sent home to 1,771 families (see Rose et al., 2014, 2016). Of these families, 937 were reached via telephone. Of the 937 families, adolescents from 616 families did not participate; 362 declined, and 254 said they were interested in participating but did not commit to attending an appointment. Those who chose to participate were 321 youth who visited the lab with a same-sex friend who was not a relative. Inclusion criteria were those in seventh or 10th grade and who identified a same-sex best friend. Exclusion criteria were participants who were not the appropriate grade levels, did not identify a same-sex best friend, and did not identify the other friend as a "best friend".

Of the 321 friend dyads (consisting of 642 adolescents) of adolescents who visited the lab, seven dyads (14 adolescents) were excluded from the study because they or their friend did not meet study criteria, which included reporting being "best friends" or "good friends" with each other (see Rose et al., 2014, 2016). This resulted in a final sample of 628 youth in 314 dyads. Of the 628 youth that participated at Time 1, there were 476 participants that participated at Time 2. Three adolescents were dropped due to missing data, and the remaining 473 participants had complete data for every measured used in the study. Of the 473 youth, 246 were in the seventh grade and 227 were in the 10th grade. The sample included 229 male participants (48.4%) and 244 (51.6%) female

participants. The sample included 66.0% European American, 26.4% African American, and less than 2% each of American Indian, Pacific Islander, and Asian American, whereas 4.9% indicated more than one race. Of the total sample, 2.7% were Latino/a. All Time 1 participants were invited to participate again 9 months later.

Procedures for Recruitment, Participation, and Data Collection

The use of the data set, collected by Rose in 2007 and 2009, meant that the current study did not require recruitment of new participants for data collection. Rose granted permission for use of the data that were collected in Columbia, Missouri after IRB approval from the University of Missouri. In order to access the data, I was required to be added as an investigator to the University of Missouri's IRB proposal. This required completing the Collaborative Institutional Training Initiative (CITI) training in research ethics offered through the University of Missouri (see Appendix A). The CITI program was completed on February 20th, 2020, with the Record ID of 35490940. Required modules included "Research with Children," "Privacy and Confidentiality," and "Unanticipated Problems and Reporting Requirements in Social and Behavioral Research." After being added as an investigator on the project, I was given access to the data, which had been deidentified. The Walden University's IRB approved the current study (IRB # 04-23-21-0998046).

Instrumentation and Operationalization of Constructs

Co-Rumination Questionnaire

The original CRQ was developed in 2002 (Rose, 2002). Rose (2002) defined co-rumination as referring to excessively discussing problems within a dyadic relationship, including frequently discussing problems, discussing the same problem repeatedly,

mutual encouragement of discussing problems, speculating about problems, and focusing on negative feelings. The measure has 27 items with three items that assess each of nine content areas (Rose, 2002). The nine content areas are (a) frequency of discussing problems, (b) discussing problems instead of engaging in other activities, (c) encouragement by the focal child of the friend's discussing problems, (d) encouragement by the friend of the focal child's discussing, (e) discussing the same problem repeatedly, (f) speculation about causes of problems, (g) speculation about consequences of problems, (h) speculation about parts of the problem that are not understood, and (i) focusing on negative feelings. Participants were asked to respond to the items in terms of the way they *usually are with their best or closest friends* who are girls if the participants were girls or who were boys if the participants were boys. Items were designed to assess more extreme levels of disclosure as compared to previous assessments of self-disclosure or social support. Sample items included "When one of us has a problem, we talk to each other about it for a long time," "When my friend has a problem, I always try really hard to keep my friend talking about it," "When we talk about a problem that one of us has, we spend a lot of time trying to figure out parts of the problem that we can't understand," and "When we talk about a problem that one of us has we talk about all of the reasons why the problem might have happened." Participants were asked to rate each item using a 5-point Likert that used the following descriptors: 1 (*not at all true),* 2 (*a little true*), 3 (*somewhat true*), 4 (*mostly true*), and 5 (*really true*).

In the original Rose (2002) study, the instrument was used with a sample of third, fifth, seventh, and ninth grade students. An exploratory factor analysis reported in the Rose paper indicated that each of the items loaded on one strong factor. According to the

Cronbach's α, the internal reliability of $\alpha = .96$ fell in the excellent range (Rose, 2002). Therefore, co-rumination scores were computed as the mean rating across all items. No items required reverse scoring. Possible co-rumination scores ranged from 1 to 5.

Following the Rose (2002) study, the CRQ has been used many times by Rose (e.g., 2002, 2007, 2014) and others (e.g., Dam, et al., 2014; Lentz, et al., 2016; Starr & Davila, 2009). Each of the previously studies cited used the 5-point Likert scale with the total co-rumination scores being the mean of all 27 items. Typically, the measure is used to produce a single co-rumination score. Scores have high internal reliability, with Cronbach's *alphas* such as .95 (Starr & Davila, 2009), .96 (Dam et al., 2014; Lentz et al., 2016) and .97 (Rose et al. 2007). Co-rumination also was found to have moderate stability over time (Rose et al., 2007).

In the data collected by Rose in 2007 and 2009, used in the current study, the seventh and 10th grade participants responded to the CRQ (Rose, 2002). The CRQ is an appropriate measure to use because the measure has high reliability and validity to assess co-rumination (Rose, 2002). Items were scored by taking the mean of the 27 items with possible scores ranging from 1-5 (see Appendix B).

Behavioral Systems Questionnaire

Furman and Wehner (1999) developed the BSQ to measure adolescents' self-perceptions of relational styles, including attachment styles with parents. The measure includes items assessing secure, dismissing, and preoccupied styles. The Furman and Wehner unpublished manuscript provided more information regarding the development of the measure, including information about initial population and reliability, but was not available.

However, information about the measure is available from the first published study with the BSQ (Furman et al., 2002). Participants rated each item using a 5-point Likert scale that used the following descriptors: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither disagree or agree*), 4 (*agree*), and 5 (*strongly agree*). No items required reverse scoring. Scores for each relational style are computed by taking the mean rating of all items for that style. Because participants rated items on a 1-5 point scale, possible mean composite scores range from 1 to 5. The BSQ has now been used in several studies (Furman et al., 2002; Furman & Simon, 2006; Lantagne & Furman, 2020) and consistently have been found to have high internal reliability (e.g., Cronbach *alphas* greater than .80; Furman et al., 2002; Lantagne & Furman, 2020).

In the data collected by Rose in 2007 and 2009, used in the current study, the seventh and 10th grade participants responded to the 15 items assessing secure, dismissing, and preoccupied attachment in regard to parents. Of the 15 items used to assess attachment, five assessed secure attachment (e.g., “I rely on my parents when I’m having troubles”), five assessed dismissing attachment (e.g., “I rarely feel like I need help from my parents ”), and five assessed the preoccupied attachment (e.g., “I am afraid that my parents think I am too dependent.”). The items were scored, and no items require reverse scoring. Scores for secure, dismissing, and preoccupied attachment was the mean for the relevant five items.

Children’s Rejection Sensitivity Questionnaire

Downey et al. (1998) developed the CRSQ. Purdie and Downey (2000) defined rejection sensitivity as (a) defensively expecting, (b) readily perceiving, and (c) reacting intensely to rejection. The initial study of the CRSQ, conducted by Downey et al., used a

target population of children ages fifth- and seventh- grade. The CRSQ used six scenarios depicting the antagonist asking another person to do something in a situation in which the other person could decline. Sample items include “Now imagine that you’re in class. Your teacher asks for a volunteer to help plan a party for your class. Lots of kids raise their hands so you wonder if the teacher will choose YOU,” and “Imagine you had a really bad fight the other day with a friend. Now you have a serious problem, and you wish you had your friend to talk to. You decide to wait for your friend after class and talk with your friend. You wonder if your friend will want to talk to you.”

Participants answered three questions about each scenario. As described below, these three items are used to form two scores for each participant. For the first item, the CRSQ asked participants to indicate their degree of anxiety or concern about the outcome of the proposed situation using a 6-point scale ranging from 1 (*not nervous*) to 6 (*very, very nervous*). Second, participants indicated their degree of being mad about the outcome of the situation using a 6-point scale ranging from 1 (*not mad*) to 6 (*very, very mad*). The third question in response to each scenario asks the participants to estimate the likelihood of the other person’s willingness to accept their request using a 6-point scale with the range of 1 (*yes!!!*) to 6 (*no!!!*). This item assesses expectations of rejection.

The three items for each scenario are used to compute a scenario-specific score for each of the six scenarios from which a final mean composite score is calculated for angry expectations and anxious expectations. To compute the score for angry expectations, the score representing expectations of rejection is multiplied by the score for the level of angry. To compute the score for anxious expectation for each scenario, the score representing expectations of rejection is multiplied by the score for the level of

nervousness. Final angry rejection expectations scores were computed by taking the mean of the angry expectation scores across the six scenarios. Final anxious expectations scores are computed by taking the mean of the anxious expectations scores across the six scenarios. The CRSQ has fair to good internal reliability with Cronbach's α ranging from .79 to .90 (Downey et al., 1998; Goldner et al., 2019).

In the data collected by Rose in 2007 and 2009, used in the current study, the seventh and 10th grade participants responded to the CRSQ (Downey et al., 2008). For each scenario, possible scores ranged from 1 to 36 for angry and anxious expectations of rejection.

Children's Sex Role Inventory

For the current study, the seventh and 10th grade participants responded to the femininity and masculinity items from the short version of the CSRI. Boldizar (1991) developed the CSRI as a self-report measure that produces subscale scores for masculine and feminine traits. To create this measure, Boldizar adapted the Bem Sex Role Inventory (Bem, 1974) for use with children. Participants in the original sample included 145 third, fourth, sixth, and seventh graders (N= 30) and produced a Cronbach's α of .75 for masculine items and .84 for feminine items. The short form of the CSRI includes 10 items for masculinity, 10 items for femininity, and 10 neutral items. Sample items for the masculine scale include "I can control a lot of kids in my class," "I am sure of my abilities," and "I am good at taking charge of things." Sample items for the feminine scale include "I am a gentle person," "It makes me feel bad when someone else is feeling bad," and "I like babies and small children a lot." Participants rated each item using a 4-point scale of 1 (*not at all true of me*), 2 (*a little true of me*), 3 (*mostly true of me*), and 4

(*very true of me*). The scores for masculinity and femininity are calculated by taking the mean of the responses to the 10 items for each subscale. The neutral items are not used in analyses and are intended to be filler items. Possible scores for masculinity and femininity ranged from 1 to 4. Research conducted since the development of the measure have indicated fair to good reliability of the scale (α = .65 masculine items, α= .81 feminine items; McGeown & Warhurst, 2020; α = .77 for girls; α = .73 for boys for masculine items, α = 77 for girls and α = .73 for boys for feminine items; Sinclair et al., 2019).

Research Questions and Hypotheses

RQ1: To what extent do attachment styles assessed at Time 1 (i.e., secure, dismissing, preoccupied) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$1: Attachment style measured by the Behavioral Systems Questionnaire (BSQ; i.e., secure, dismissing, and preoccupied styles; Furman et al., 2002) do not predict Time 2 co-rumination measured by the Co-Rumination Questionnaire (CRQ; Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a1: One or more of the attachment variables (secure, dismissing, preoccupied) as measured by the BSQ predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

RQ2: To what extent do rejection sensitivities assessed at Time 1 (angry and/or anxious expectations of rejection) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$2: Neither of the variables of rejection sensitivity (angry and/or anxious expectations of rejection) measured by the Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996) predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a2: The variables of rejection sensitivity (angry and/or anxious expectations of rejection) measured by the RSQ predicts Time 2 co-rumination measured by the CRQ, while controlling for Time 1 co-rumination and gender.

RQ3: To what extent do gender role orientations assessed at Time 1 (masculinity and femininity) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$3: Neither of the variables of gender role orientation (masculinity and femininity) measured by the Children's Sex Role Inventory (CSRI; Boldizar, 1991) predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a3: One or both of the variables of gender role orientation (masculinity and femininity) measured by the CRSI predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

RQ4: To what extent are there gender differences in the study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity)?

$H_0$4: There are no gender differences in the study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity).

H_a4: There are gender differences in one or more study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity.)

RQ5: To what extent does gender moderate the relationships between attachment styles assessed at Time 1 (i.e., secure, dismissing, preoccupied) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

H_05: Gender does not moderate the relationship between any of the three attachment styles and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a5: Gender does moderate the relationship between one or more of the three attachment styles and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

RQ6: To what extent does gender moderate the relationships between rejection sensitivities assessed at Time 1 (i.e., angry and anxious expectations of rejection) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

H_06: Gender does not moderate the relationship between either of the two rejection sensitivity variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a6: Gender does moderate the relationship between at least one of the two rejection sensitivity variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

RQ7: To what extent does gender moderate the relationships between gender role orientations assessed at Time 1 (masculinity and femininity) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$7: Gender does not moderate the relationship between either of the two gender role orientation variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a7: Gender does moderate the relationship between at least one of the two gender role orientation variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

RQ8: What is the best model of the combined and relative effects of the three attachment style variables, the two rejection sensitivity variables, the two gender orientation variables, gender, and the seven two-way interactions with gender in accounting for variance in Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

Data Analysis Plan

The deidentified data were compiled in an Excel file by Rose and was converted to the IBM SPSS Statistics 25 data file to perform the statistical analyses.

Psychometric Properties

As described, according to Rose (2002), there are nine components of co-rumination. However, an exploratory factor analysis in the original study, indicated only one strong factor with high internal reliability of .96. Most previous studies have used a single score based on all of the co-rumination items (e.g., Rose, 2002; Starr & Davila, 2009). Two studies have suggested that the measure consists of more than one factor.

Davidson et al. (2014) suggested a three- factor model included Rehashing (Factor 1), Mulling (Factor 2), and Encouraging Problem Talk (Factor 3). In addition, Bastin et al. (2014) used a confirmatory factor analysis, which supported a two-factor model of co-brooding and co-reflection as well as a single, overarching co-rumination factor.

A confirmatory factor analysis was conducted with the data for the current study. Given the high internal reliability of the 27 items and the failure of past studies to identify a replicable multi-factor solution (since the solutions were different in Davidson et al. 2014), a one-factor solution is expected. If the data do not support the one-factor solution, then the research questions and hypotheses will be adjusted accordingly. Cronbach *alphas* also will be computed for all other scales to determine whether the internal reliabilities in this sample are acceptable.

Descriptive Statistics

Next, descriptive statistics, including *means, standard deviations,* and *ranges* for the variables was computed. Correlations among all study variables were computed as well.

Gender Differences

Gender differences were tested as described in the current study. Grade differences were not described in the current study as the youth are close in age, and hypotheses were not put forth for grade differences. However, grade was included in analyses for descriptive purposes. Analyses producing grade effects were considered exploratory. For each study variable, *mean-level* gender differences were tested. Specifically, a gender between-subjects ANOVA was computed for each variable. *F* values, *p* values, and the *means* by gender were reported.

Attachment, Rejection Sensitivity, and Gender Role Orientation as Predictors of Co-Rumination

For the primary analyses, multiple regression analyses were performed to test the relationships between the predictor variables collected at Time 1 and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender (Creswell & Creswell, 2018). In each of the regression analysis, Time 2 co-rumination served as the dependent variable.

An important decision point involved how many predictor variables to include in each regression analysis. The study involved seven predictor variables (three attachment variables; two rejection sensitivity variables; two gender role orientation variables). Options ranged from conducting seven regression analyses with one predictor variable each to conducting a single regression analysis with all seven variables as simultaneous predictors.

Importantly, the approaches of including more or fewer predictor variables have different strengths and drawbacks. A benefit of including multiple predictors was that the effect of each variable is tested while controlling for the other variables. However, a drawback was that the meaning of nonsignificant effects can be difficult to determine. For example, if two predictors were correlated and neither predicted the independent variable, this could either be because neither predictor was associated with the outcome or because the predictors were associated with the outcome but also with each other such that neither variable predicted over the other. Another disadvantage of having larger numbers of predictors was that there was less power to detect relationships. In contrast, including fewer (or a single) predictor variable can make interpretation of the effect(s)

clearer. However, whether the effects would hold while controlling for other predictor variables was not known. In addition, computing a large number of separate analyses increased the likelihood of Type 1 error.

For the current study, the data analysis plan was developed keeping these issues in mind. For the primary analyses, three regression analyses were conducted that each included a small, theoretically coherent set of predictor variables. The first regression analysis included the three attachment variables as predictors. The second regression analysis included the two rejection sensitivity variables as predictors. The third regression analysis included the two gender role orientation variables as predictors. For regression analyses, the statistics that were reported are the R^2, *F* statistic results, and *p* value for the overall model and, for each predictor, the *t* statistic results, *p v*alue, unstandardized coefficient, and squared semi-partial correlation (sr^2) with the criterion.

Exploration of Gender Differences and the Moderating Role of Gender

Several additional exploratory analyses were conducted to explore gender differences and the moderating role of gender. To answer the fourth research question, a series of nine one-way ANOVAs were conducted with gender as the independent variable and each of the primary study variables, in turn, as the dependent variables (i.e., Time 1 co-rumination, Time 2 co-rumination, each of the three attachment style variables, each of the two rejection sensitivity variables, and each of the two gender orientation variables).

Additionally, for each primary regression analysis (Research Questions 1-3), an additional exploratory regression analysis was performed to examine whether the relationships between Time 2 co-rumination and independent variables were moderated

by gender to answer Research Questions 5-7. Specifically, the fourth regression analysis for Research Question 4 included Time 1 co-rumination, the three attachment variables, gender, and the three two-way interactions between gender and the three attachment variables as predictors. The fifth regression for Research Question 6 included Time 1 co-rumination, the two rejection sensitivity variables, gender, and the two two-way interactions between gender and each rejection sensitivity variable as predictors. The sixth regression for Research Question 7 included Time 1 co-rumination, the two gender role orientation variables, gender, and the two two-way interactions between gender and each gender role orientation variable as predictors.

Combined and Relative Effects of All Study Predictors of Time 2 Co-Rumination

Finally, as a supplemental exploratory analysis, a regression was performed to answer Research Question 8 that initially included all 16 predictor variables: Time 1 co-rumination, the three attachment style variables, the two rejection sensitivity variables, the two gender orientation variables, gender, and the seven two-way interactions with gender. A backward elimination procedure was used that removed the variable with the smallest semi-partial correlation if $p < .15$ and continued in subsequent steps to eliminate variables that did not satisfy the $p < .15$ cutoff. However, because two-way interactions cannot be properly interpreted without all constituent predictors in the model, the final backward elimination model was modified as needed to arrive at the final best model. For example, if the gender*masculine interaction was retained in the final backward elimination model but the gender variable or the masculine variable was removed, then the removed variable would need to be included for a valid final best model. There may be concerns about interpretability with this approach, but the approach provided the most

information about which variables are most predictive while controlling for all other variables. Any significant interactions with gender were plotted and interpreted using simple slope analyses.

Power Analyses

Power analysis for sample size is conducted to calculate the necessary sample size for a given effect size at a specific *alpha* and power level (Cohen, 1988). Because archival data were used, the sample size was predetermined to be 473 participants. When sample size is predetermined, power analysis was conducted to calculate the detectable effect size at a specified *alpha* and power level, what Faul et al. (2009) termed sensitivity power analysis. For multiple linear regression, the effect size of interest, Cohen's f^2, is the ratio of the squared semi-partial correlation (sr^2) of an individual predictor with the criterion to the overall model R^2. In a sensitivity analysis for a fixed model R^2 increase using the G*Power 3.1.92 (Faul et al.) for the most complex of the seven research questions in this study that contains 16 predictors, a sample of 473 participants was statistically significantly detect at *alpha* = .05 a Cohen's f^2 as small as .0083. In overall model R^2's .02, .13, and .26 small, medium, and large effects, respectively (Cohen, 1988) the smallest detectable effect corresponds to an individual predictor's sr^2 of .0081, .0072, and .0061 respectively (C.T. Diebold, personal communication, January 6, 2021) all of which were less than .01, which is considered a small individual predictor effect.

For all analyses the principal focus of interpretation was on effect sizes and practical significance rather than solely on effects with observed $p < .05$, which negates the need for procedures to account for multiple statistical testing, a position consistent with Cohen (1994) and Wilkinson and The APA Task Force on Statistical Inference

(1999). Further, while the issue of *alpha* adjustment for multiple tests has been widely debated, I followed the camp that has demonstrated it can cause more harm than good (Feise, 2002; Finkel et al., 2015; Gelman et al., 2012; O'Keefe, 2003; Wiley, 2009), particularly when, as in the current study, specific research questions and analysis plan had been specified and reported results were not a fishing expedition of the data (Wilkinson and The APA Task Force on Statistical Inference, 1999).

Threats to Validity

Threats to internal and external validity were taken into consideration to ensure that appropriate conclusions were drawn (Creswell & Creswell, 2018). Internal validity threats are threats that can impede the ability to draw correct inferences from the data collected and need to be addressed prior to drawing inferences (Creswell & Creswell, 2018). One threat to internal validity was if the measures did not adequately assess the constructs they were intended to assess. However, the measures used in the current study had been found to have good internal validity (e.g., the constructs are related to other variables in conceptually meaningful ways in other studies). A second threat to internal validity was an individual's maturation from Time 1 to Time 2 (over a 9-month period). Other variables could also be related both to the predictors and the outcomes that aren't controlled in the current study. Several examples of other variables could be grade point averages (GPA) or parenting styles other than attachment styles.

Threats to external validity were present when the findings are not appropriately generalized to others (Creswell & Creswell, 2018). To ensure external validity is not violated, the results should not be generalized to other populations such as younger children when the sample in this dissertation is adolescents. In addition, it is

acknowledged that the results cannot be applied to adolescents in different cultures; however, the findings likely may be generalized to adolescents from other mid-sized Midwestern towns.

Ethical Procedures

As the current study used archival data, previously collected by Rose in 2007 and 2009, access to participants and data collection had already occurred. Parental consent and youth assent were obtained from the original researcher. As described in the consent/assent forms, the survey data were kept confidential. The original research required documentation of participants' names to be able to track their data over time. However, the hard copies of the surveys were labeled with identification numbers rather than names, and the documents linking the names and identification numbers were stored separately from the data. The data that were shared for the current study were deidentified such that they included only the identification numbers and not the participants' names. In addition, since obtaining the data, I have ensured that the data were kept confidential on a password-protected computer. In addition, it was important for me to review the original IRB application and approval to ensure that all procedures met ethical standards.

Summary

This chapter provided an explanation of the research design of the longitudinal nonexperimental self-report study that included two time points that were 9 months apart to address the research questions in the current study. An in-depth explanation of each instrument was given, including sample items as well as how each item and scale was scored. Each instrument used had good to high reliability and validity and was normed

for use with youth. The data analysis plan described included evaluating psychometric properties, computing descriptive statistics, and computing multiple regression analyses to address the primary research questions. Advantages and disadvantages of including fewer versus more predictors in the regression analyses were considered. Threats to internal and validity also were discussed.

The following chapter will summarize the secondary data set with the results of the statistical analyses.

Chapter 4: Results

The purpose of this study was to determine factors that may predict co-rumination in same-sex adolescent friendship dyads using a data set collected by Rose in 2007 and 2009. Data collection included two time points. The predictors of Time 2 co-rumination that were included in this study were Time 1 attachment styles (secure, dismissing, preoccupied), Time 1 rejection sensitivities (angry rejection expectations and anxious rejection expectations), and Time 1 gender orientations (masculine and feminine), while controlling for Time 1 co-rumination. Gender also was included as a control variable, and further examination considered whether gender moderated each of the predictor variables. Lastly, consideration for what was the best predicting model for co-rumination at Time 2 was tested.

The following chapter presents the research questions and hypotheses. The demographic information presented includes the characteristics of the participants in terms of grade, race, ethnicity, gender, descriptive analyses, and tests of hypotheses.

Data Collection

Data collection occurred across a 9-month period between 2007 and 2009 by Rose. During this time, participants completed the questionnaires (demographics, CRQ, BSQ, CRSQ, CRSI) at two time points. Originally, the sample was recruited using a roster that included adolescents who attended the local public school district. As described in Chapter 3, adolescents were chosen at random from the roster and invited to participant. There were 1,771 adolescents who were invited to participate with a friend. In the end, 573 adolescents participated at both time points. Also, as previously discussed

in Chapter 3, a power analysis indicated that the sample size in the data set is large enough to detect small to moderate effect sizes (depending on the analysis).

Results

Internal Reliability of Measures and Psychometric Properties of the CRQ

A confirmatory factor analysis was performed to examine whether a one-factor solution was appropriate for the CRQ (as has been found in most studies, e.g., Rose, 2002). The eigenvalues indicated one strong factor; the first eigenvalue was 17.30, the second eigenvalue dropped to 1.34, and the third eigenvalue was .94. In addition, each item loaded strongly on the single factor (.74 to .84). Not surprisingly, the Cronbach's *alpha* across the 27 items was very high (α = .98).

Table 1 provides Cronbach's α for each measure. As can be seen in Table 1, most of the measures indicated good internal reliability (greater than .80). Cronbach's *alpha* computer for an angry expectation of rejection on the CRSQ and of masculinity also had good internal reliability (αs = .78). The Cronbach's *alpha* for femininity was lower (α = .63).

Table 1

Cronbach's α

Measure	Cronbach's α
CRQ (Rose, 2002)	.98
BSQ (Furman & Wehner, 1991)	
Secure attachment	.88
Preoccupied attachment	.87
Dismissing attachment	.86
CRSQ (Downey et al. 1998)	
Angry expectation of rejection	.78
Anxious expectation of rejection	.81
CSRI (Boldizar, 1991)	
Masculinity	.78
Femininity	.63

Descriptive Statistics

Table 2 displays the demographic information for the 473 participants. Information is presented about the number and percent of participants by grade, gender, and racial ethnic groups. The percent of girls and boys and adolescents of different races/ethnicities are generally consistent with the town from which they were recruited (U.S. Census Bureau, 2018). There were two exceptions; the sample included a somewhat higher percent of African American participants and lower percent of Latinx participants compared to the larger community. It is difficult to know for sure how

broadly the results will generalize. However, the results would likely generalize to adolescents in similar midwestern towns.

Table 2

Characteristics of Sample

Characteristic	*N*	%
Grade		
Seventh	246	52.0
10th	227	48.0
Gender		
Male	229	48.4
Female	244	51.6
Race		
American Indian	1	0.2
Asian American	8	1.7
Hawaiian/ Pacific Islander	1	.2
African American	125	26.4
European American	312	66.0
More than one race	23	4.9
Ethnicity		
Latinx	13	2.7
Not Latinx	452	95.6

Table 3 provides the means, standard deviations, and ranges for the variables. For the co-rumination variables, the mean score was somewhat above the midpoint of the 5-point scales. For the attachment variables, the mean scores ranged between below the midpoint to slightly over the midpoint of the 5-point scales. For the rejection sensitivities variables, the mean scores were below the midpoint of the range scores. For the gender

role orientation variables, the mean scores were slightly over the midpoint of the 4-point scales.

Table 3

Means, Standard Deviations, and Range of Variables

Variable	*Range*	*Minimum*	*Maximum*	*Mean*	*Standard deviation*
Co-rumination at Time 1	4.00	1.00	5.00	2.85	0.84
Attachment style with parents					
Secure	4.00	1.00	5.00	3.33	0.97
Dismissing	4.00	1.00	5.00	2.98	0.93
Preoccupied	4.00	1.00	5.00	1.94	0.79
Gender role orientation					
Masculinity	2.8	1.20	4.00	2.94	0.48
Femininity	2.4	1.60	4.00	2.97	0.53
Expectations to rejection					
Anxious	26.00	1.00	27.00	8.12	4.41
Angry	26.17	1.00	27.17	6.44	3.79
Co-rumination at Time 2	3.93	1.00	4.93	2.80	0.90

Table 4 provides the correlations among the variables. Time 1 co-rumination and Time 2 co-rumination were significantly and positively correlated. Otherwise, Time 1 co-rumination and Time 2 co-rumination were significantly and positively correlated only with femininity and anxious rejection sensitivity. Significant correlations among the attachment variables were found only for secure and dismissing attachment, which were negatively correlated. The correlation between the rejection sensitivity variables was significant and positive. The correlation between the gender role orientation variables was significant and positive.

Table 4

Correlations among Time 1 Co-Rumination, Attachment Styles, Rejection Sensitivities, Gender Role Orientations, and Time 2 Co-Rumination

	Time 1 co-Rumination	Secure	Dismissing	Preoccupied	Masculine	Feminine	Angry expectation to rejection	Anxious expectation to rejection
Time 1 co-Rumination								
Attachment								
Secure	.04							
Dismissing	-.04	-.73***						
Preoccupied	.05	-.01	.11*					
Gender role orientation								
Masculine	.03	.17***	-.06	-.20***				
Feminine	.40**	.18***	-.13**	-.10*	.24***			
Expectation to rejection								
Angry	.04	-.51	.06	.31***	-.22***	.15***		
Anxious	.17***	-.06	.04	.22***	-.40***	-.03	.69***	
Time 2 co-Rumination	.58***	-.01	-.03	.03	.00	.28***	-.03	.09*

* $p < .05$, ** $p < .01$; *** $p < .001$.

Research Questions and Hypotheses

RQ1: To what extent do attachment styles assessed at Time 1 (i.e., secure, dismissing, preoccupied) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$1: Attachment style measured by the BSQ (i.e., secure, dismissing, and preoccupied styles; Furman et al., 2002) do not predict Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a1: One or more of the attachment variables (secure, dismissing, preoccupied) as measured by the BSQ predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

Attachment Styles and Co-Rumination

A regression analysis was performed to analyze the relationship between attachment styles (secure, dismissing, preoccupied) and Time 2 co-rumination, while controlling for gender and Time 1 co-rumination (control variables). The results of the regression analysis are summarized in Table 4. Gender and Time 1 co-rumination were entered as predictors at step 1 in the regression analysis and, at step 2, the three attachment styles were entered. The R^2 value for step 1 was .35 and was significant $F(2, 470) = 124.75$, $p < .001$. Time 1 co-rumination was a positive and significant predictor of Time 2 co-rumination, meaning that adolescents who engaged in co-rumination at Time 1 were more likely to engage in co-rumination 9 months later. Gender also was a significant predictor, indicating that girls were more likely to co-ruminate at Time 2 than boys. The change in R^2 value when step 2 was added was .00. This change was not

significant (p = .67). The R^2 value was .35. In addition, there were not significant relationships between any of the three attachment variables and co-rumination at Time 2. Information regarding interactions with gender are included in Table 5 but are described later in this section in conjunction with Hypothesis 5.

Table 5

Summary of Regression Analyses Examining Attachment Styles at Time 2 Co-Rumination, While Controlling for Time 1 Co-Rumination

	Dependent variable Time 2 co-rumination		
	β	*t*	*p*
Step 1			
Time 1 co-rumination	.54	13.16	.000
Gender	-.11**	-2.62	.01
Step 2			
Secure	-.07	-.1.21	.23
Dismissing	-.07	-1.21	.23
Preoccupied	.01	0.32	.75
Step 3			
Secure X gender	-.12	-0.56	.58
Dismissing X gender	-.17	-0.90	.37
Preoccupied X gender	.21	1.95	.05

RQ2: To what extent do rejection sensitivities assessed at Time 1 (angry and/or anxious expectations of rejection) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$2: Neither of the variables of rejection sensitivity (angry and/or anxious expectations of rejection) measured by the RSQ (Downey & Feldman, 1996) predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a2: The variables of rejection sensitivity (angry and/or anxious expectations of rejection) measured by the RSQ predicts Time 2 co-rumination measured by the CRQ, while controlling for Time 1 co-rumination and gender.

Rejection Sensitivities and Co-Rumination

A separate linear regression analysis was performed to examine the relationship between rejection sensitivities (angry, anxious) and Time 2 co-rumination, while controlling for gender and Time 1 co-rumination. Gender and Time 1 co-rumination were entered as predictors at step 1 in the regression analysis and, at step 2, the two rejection sensitivities variables were entered. As discussed in response to Research Question 1, the R^2 value for the first step was .35 and significant $F(2, 470) = 124.75$, $p < .001$. Time 1 co-rumination was a positive predictor of Time 2 co-rumination and being female also predicted Time 2 co-rumination. The change in R^2 when adding this step was .00. The R^2 value was .35. This change was not significant, $F(4, 468) = 62.84$, $p = .384$. There was not a significant relationship between angry rejection expectations and co-rumination at Time 2. Also, there was not a significant relationship between anxious rejection expectations and Time 2 co-rumination. Information regarding interactions with gender are included in Table 6 but are described later in this section in conjunction with Hypothesis 6.

Table 6

Summary of Regression Analyses Examining Rejection Expectations and Time 2 Co-Rumination, While Controlling for Time 1 Co-Rumination

	Dependent variable Time 2 co-rumination		
	β	*t*	*p*
Step 1			
Time 1 co-rumination	.54	13.16	.000
Gender	-.11	-2.62	.01
Step 2			
Angry	-.07	-1.30	.20
Anxious	.03	0.57	.57
Step 3			
Angry expectation to rejection X gender	.08	0.67	.51
Anxious expectation to rejection X gender	-.03	-0.22	.83

RQ3: To what extent do gender role orientations assessed at Time 1 (masculinity and femininity) predict Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$3: Neither of the variables of gender role orientation (masculinity and femininity) measured by the CSRI (Boldizar, 1991) predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

H_a3: One or both of the variables of gender role orientation (masculinity and femininity) measured by the CRSI predicts Time 2 co-rumination measured by the CRQ (Rose, 2002), while controlling for Time 1 co-rumination and gender.

Gender Role Orientation and Co-Rumination

A separate linear regression analysis was performed to analyze the relationship between gender role orientation (masculine, feminine) and Time 2 co-rumination, while controlling for gender and Time 1 co-rumination. Gender and Time 1 co-rumination were entered as predictors at step 1 in the regression analysis and, at step 2, the two gender role orientation variables were entered. Again, the first step with gender and Time 1 co-rumination, was significant. The R^2 value was .35 $F(2, 470) = 124.75$, $p < .001$. Time 1 co-rumination was a positive predictor of Time 2 co-rumination and being female also predicted Time 2 co-rumination. The change in R^2 when adding this step was .00. The R^2 value was .35. This change was not significant. There was not a significant relationship between a masculine gender role orientation and Time 2 co-rumination. Also, there was not a significant relationship between a feminine gender role orientation and Time 2 co-rumination. Information regarding interactions with gender are included in Table 7 but are described later in this section in conjunction with Hypothesis 7.

Table 7

Summary of Regression Analyses Examining Gender Role Orientation at Time 2 Co-Rumination, While Controlling for Time 1 Co-Rumination

	Dependent variable Time 2 co-rumination		
	β	*t*	*p*
Step 1			
Time 1 co-rumination	.54	13.16	.000
Gender	-.11	-2.62	.009
Step 2			
Masculine	.00	0.01	.99
Feminine	.02	0.43	.67
Step 3			
Masculine X gender	-.01	-0.05	.96
Feminine X gender	.12	0.49	.63

RQ4: To what extent are there gender differences in the study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity)?

$H_0$4: There are no gender differences in the study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity).

H_a4: There are gender differences in one or more study variables (i.e., co-rumination, secure, dismissing, and preoccupied attachment; angry and anxious expectations of rejection; masculinity and femininity.)

Gender Differences

For each construct, a *t* test was performed to test for differences between girls and boys. The result *means*, *standard deviations*, *t* values, and *p* values by gender are presented in Table 8.

Co-rumination. The main effect for gender was significant for co-rumination at both time points. Girls reported co-ruminating more than boys at both Time 1 and Time 2 co-rumination.

Attachment styles. The *t* tests for each of the three attachment variables were not significant. Girls and boys did not differ on secure, dismissing, or preoccupied attachment.

Rejection sensitivity. The *t* test performed for anxious rejection sensitivity was significant, with girls reporting higher levels of anxious expectation to rejection than boys. The *t* test conducted for angry expectation of rejection was not significant.

Gender role orientation. The *t* tests performed for masculinity was significant, with boys reporting higher levels of masculinity than girls. The *t* test conducted for femininity was significant, with girls reporting higher levels of femininity than boys.

Table 8

Co-Rumination, Attachment Styles, Rejection Sensitivities, and Gender Role Orientation by Gender Group

Variable	*M* (*SD*) girls	*M* (*SD*) boys	*t*
Co-rumination at time 1	3.18 (.75)	2.50 (.79)	9.67***
Attachment style with parents			
Secure	3.28 (1.00)	3.40 (.94)	1.33
Dismissing	2.98 (.98)	2.98 (.88)	0.09
Preoccupied	1.92 (.80)	1.96 (.78)	0.62
Gender role orientation			
Masculinity	2.85 (.51)	3.03 (.44)	4.10***
Femininity	3.21 (.48)	2.71 (.45)	11.76***
Expectation of rejection			
Anxious	8.60 (4.67)	7.33 (3.98)	3.84***
Angry	6.37 (3.88)	6.53 (3.71)	0.45
Co-rumination at time 2	3.08 (.83)	2.50 (.84)	7.48***

*$p < .05$; ** $p < .01$; *** $p < .001$.

RQ5: To what extent does gender moderate the relationships between attachment styles assessed at Time 1 (i.e., secure, dismissing, preoccupied) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$5: Gender does not moderate the relationship between any of the three attachment styles and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a5: Gender does moderate the relationship between one or more of the three attachment styles and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

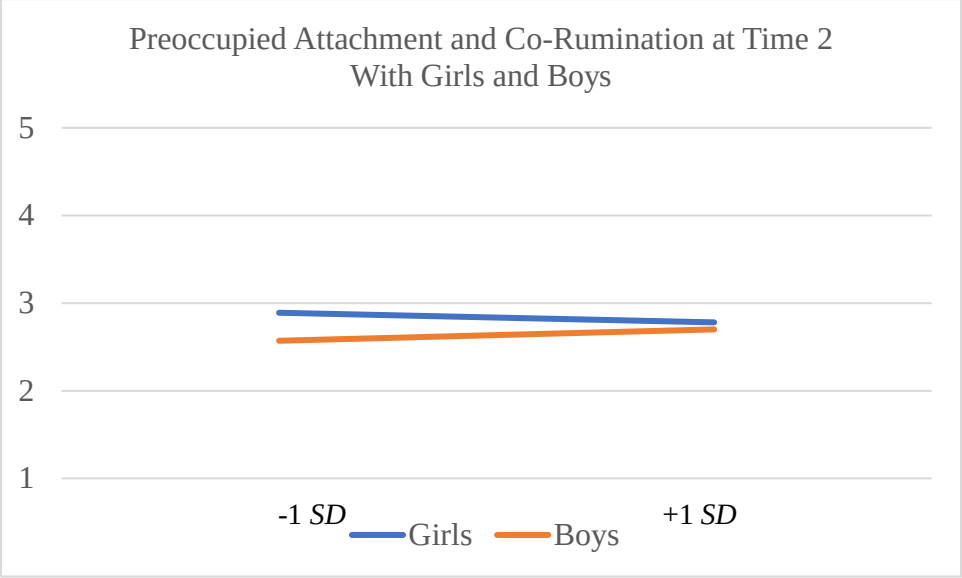
The third step of this model tested for the interactions between the attachment style variables and gender. The results of this step are presented in Table 4. The change in R^2 from the when adding this step was .01 and was not significant $F(8, 464) = 31.89$ $p = .242$. The interaction between gender and secure attachment was not a significant predictor of Time 2 co-rumination. The interaction between gender and a dismissing attachment style was not a significant predictor of Time 2 co-rumination. The interaction between gender and a preoccupied style was a nearly significant predictor of Time 2 co-rumination ($p = .05$). Although the step was not significant, to provide descriptive information, the interaction was probed. The results of this analysis should be interpreted with caution given that the full step was not significant.

The interaction between gender and the preoccupied style was graphed by computing expected co-rumination scores for girls and for boys at one *standard deviation* above the mean and one *standard deviation* below the mean. This graph is presented in Figure 1. In addition, simple slope analyses were conducted. For girls, the relationship between preoccupied attachment and co-rumination was negative, $\beta = -.06$, $F(4, 468)$, $p = .27$. As the simple slope is negative, as preoccupied attachment increases in girls, co-rumination at Time 2 decreases. However, this relation was not strong enough to be significant. For boys, the relationship between preoccupied attachment and co-rumination was positive, $\beta = .08$, $F(4, 468)$, $p = .07$. The simple slope is positive; this means as

preoccupied attachment increases in boys, co-rumination at Time 2 increases. This effect was marginally significant.

Figure 1

Preoccupied Attachment and Co-Rumination at Time 2 With Girls and Boys



RQ6: To what extent does gender moderate the relationships between rejection sensitivities assessed at Time 1 (i.e., angry and anxious expectations of rejection) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$6: Gender does not moderate the relationship between either of the two rejection sensitivity variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a6: Gender does moderate the relationship between at least one of the two rejection sensitivity variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

The third step of this model tested for the interactions between the rejection sensitivity variables and gender. The results of this step are presented in Table 5. The change in R^2 when adding this step was .00 and was not significant $F(6, 466)$ 41.87 p = .743. The interaction between gender and angry rejection expectations was not a significant predictor. The interaction between gender and anxious rejection expectations also was not a significant predictor of Time 2 co-rumination.

RQ7: To what extent does gender moderate the relationships between gender role orientations assessed at Time 1 (masculinity and femininity) and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

$H_0$7: Gender does not moderate the relationship between either of the two gender role orientation variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

H_a7: Gender does moderate the relationship between at least one of the two gender role orientation variables and Time 2 co-rumination, while controlling for Time 1 co-rumination and gender.

The third step of this model tested the interactions between gender role orientation and gender. The results of this step are presented in Table 6. The change in R^2 value when adding this step was .00 and not significant $F(6, 466) = 41.35$, $p = .877$). The interaction between gender and masculinity was not a significant predictor of Time 2 co-rumination. The interaction between gender and femininity also was not a significant predictor of Time 2 co-rumination.

RQ8**:** What is the best model of the combined and relative effects of the three attachment style variables, the two rejection sensitivity variables, the two gender orientation

variables, gender, and the seven two-way interactions with gender in accounting for variance in Time 2 co-rumination, while controlling for Time 1 co-rumination and gender?

To answer this research question, a backward elimination regression procedure was conducted to determine the best fitting model. Specific steps for the analysis are detailed in Chapter 3. Hypotheses are not provided for this statistically-driven best model approach.

For this analysis, the dependent variable was Time 2 co-rumination and each of the previously described independent and control variables served as predictors. The results of this model are presented in Table 8. The model was significant, and the predictors accounted for 34% of the variance in co-rumination at a second time point; $R^2 = .34$, $F(16, 456) = 15.92$, $p < .001$. In this model, the following variables were included: Time 1 co-rumination, gender, secure attachment, dismissing attachment, preoccupied attachment, angry expectations of rejection, anxious expectations of rejection, masculinity, femininity, interaction between secure attachment and gender, interaction between dismissing attachment and gender, interaction between preoccupied attachment and gender, interaction between angry expectations of rejection and gender, interaction between anxious expectations of rejection and gender, interaction between masculinity and gender, and interaction between femininity and gender.

Table 9

First Model of Predicting Variables of Time 2 Co-Rumination

	B	*t*	*p*
Time 1 co-rumination	.53	12.04	.000
Gender	-.23	-0.51	.610
Secure attachment	-.04	-0.52	.600
Dismissing attachment	-.01	-0.11	.911
Preoccupied attachment	-.04	-0.61	.544
Angry expectation to rejection	-.09	-1.20	.232
Anxious Expectation to rejection	.03	0.48	.634
Masculinity	.00	-.006	.950
Femininity	.00	-0.01	.991
Interaction of gender and secure attachment	-.15	-0.68	.494
Interaction of gender and dismissing attachment	-.20	-1.01	.315
Interaction between gender and preoccupied attachment	.20	1.75	.080
Interaction between gender and angry expectation to rejection	.06	0.46	.649
Interaction between gender and anxious expectation to rejection	-.03	-0.21	.838

	B	*t*	*p*
Interaction of gender and masculinity	.12	0.39	.700
Interaction between gender and femininity	.13	0.53	.600

Two variables had *p* values lower than .10: Time 1 co-rumination and the interaction between gender and the preoccupied attachment style. These predictors were retained for the next regression model. In addition, given the interaction, the main effects of gender and preoccupied attachment were retained as well. Therefore, in the next regression model, Time 2 co-rumination was predicted from Time 1 co-rumination, gender, preoccupied attachment, and the interaction between gender and preoccupied attachment. The results of this regression model are presented in Table 10. The model was significant. In this model, only preoccupied attachment had a *p* value greater than .10, but this variable could not be dropped due to the interaction between preoccupied attachment and gender. The remaining variables, Time 1 co-rumination, gender, and the interaction between gender and a preoccupied attachment, had *p* values less than .10. This model was adopted as the final model. The effects of Time 1 co-rumination and gender met the traditional criteria for statistical significance, $p < .01$. The effect of the interaction between gender and a preoccupied attachment was marginally significant with a *p* value of .05.

Table 10

Final Model of Predicting Variables of Time 2 Co-Rumination

	B	*t*	*p*
Time 1 co-rumination	.54	13.14	.000
Gender	-.27	-2.72	.007
Preoccupied attachment	-.06	-1.11	.266
Interaction between gender and preoccupied attachment	.19	1.80	.073

Summary

This study consisted of analyzing a data set that was collected by Rose from 2007 and 2009. Adolescents were asked demographic questions as well as the CRQ (Rose, 2002), BSQ (Furman et al., 2002), RSQ (Downey & Feldman, 1996), and the CSRI (Boldizar, 1991) at two time points (9 months apart).

Gender differences were examined for co-rumination, attachment styles, expectations to rejection, and gender role orientations. The main effect for gender was significant for co-rumination; girls reported co-ruminating more than boys at both Time 1 and Time 2. Girls also reported higher levels of anxious rejection sensitivity than boys; however, there was no gender difference with regards to angry expectations of rejection. In addition, girls scored higher than boys on femininity, and boys scored higher than girls on masculinity.

In the final accepted model, the effects of the following predictors were significant or marginally significant: Time 2 co-rumination, gender, and the interaction

between gender and preoccupied attachment. For girls, preoccupied attachment was positively associated with Time 2 co-rumination; for boys preoccupied attachment was negatively associated with Time 2 co-rumination. However, neither effect was statistically significant.

In the next chapter, Chapter 5, the theoretical framework is reviewed, and comparisons of the current findings and previous research are considered. Limitations of the study are also discussed. Recommendations for future research are explored. Finally, implications of the results for positive social change are discussed.

Chapter 5: Discussion, Conclusions and Recommendations

The purpose of the current quantitative study was to consider possible factors at one time point that may predict co-rumination between adolescent friends at a second time point, while controlling for initial co-rumination and gender. Although co-rumination has some advantages (e.g., increase in friendship quality; Homa & Chow, 2014), there are also negative aspects to co-rumination, such as an increase of both depressive and anxiety symptoms (Rose et al., 2007). It is important to know about predictors of co-rumination to be able to intervene with those predictive factors to reduce co-rumination. Several predicting factors were considered, including attachment relationships with parents (secure, dismissing, preoccupied; Bowley, 1948), angry and anxious expectations of rejection (Downey & Feldman, 1996), and gender role orientation (feminine or masculine traits; Boldizar, 1991).

Summary of Findings

Regression analyses were performed to test whether attachment style, rejection expectations, and gender role orientation predicted later co-rumination. In all analyses, Time 1 co-rumination and gender were control variables. As expected, based on past research (Rose et al., 2007), Time 1 co-rumination was a positive predictor of Time 2 co-rumination. Also consistent with past research (Homa et al., 2014; Schwartz-Mette & Smith; 2018), being female predicted Time 2 co-rumination.

In terms of the other predictors in the regression analyses, the main effect of attachment styles, angry and anxious expectations of rejection, and femininity and masculinity did not predict Time 2 co-rumination. Based on past literature, finding no significant main effects of attachment style, rejection expectations, and gender role

orientation was unexpected and will be interpreted in the next section. In the less stringent correlational analyses, femininity and anxious expectations of rejection were correlated with Time 1 co-rumination and Time 2 co-rumination. These relations will also be interpreted in the next section.

Gender was examined in two ways; gender differences in the mean levels of the variables were examined, and gender was considered as a moderator of the relationships between the predictors and Time 2 co-rumination in the regression analyses. Some findings were consistent with past research. In the current study, girls reported co-ruminating more frequently than boys at both Time 1 and Time 2 (Homa et al., 2014; Schwartz-Mette & Smith, 2018). An additional expected difference was that boys would report higher levels of masculinity than girls and girls would report higher levels of femininity than boys (Bem, 1974; Bozionelos & Bozionelos, 2003), and these gender differences were found. Other effects were expected based on past research. Past research indicated no differences between girls and boys and attachment styles (Homa et al., 2014). In the current study, girls and boys did not differ on secure, dismissing, or preoccupied attachment. In addition, in past research, boys had higher angry expectations of rejection than girls (Goldner et al., 2019). However, in the current study, girls reported higher levels of anxiously expecting rejection than boys. Angrily expecting rejection was not significant between boys and girls.

In terms of moderation, only the interaction between gender and a preoccupied attachment style approached significance (p = .05) as a predictor of Time 2 co-rumination (controlling for Time 1 co-rumination and gender). Graphing the interaction revealed non-significant trends for each gender. For boys, preoccupied attachment styles were

positively related to co-rumination at Time 2. For girls, preoccupied attachment styles were negatively related to co-rumination at Time 2. However, the simple slopes were not significant for either girls or boys. Given that the interaction was only marginally significant, the step in the regression analyses that included this interaction was not significant, and the simple slopes also were not significant, the meaning of this finding should not be overinterpreted.

Finally, to examine which model was the best model to predict Time 2 co-rumination, a backwards elimination procedure was used. The findings indicated that Time 1 co-rumination, gender, and the interaction of gender with a preoccupied attachment style were the best predictors. As expected, Time 1 co-rumination and gender were significant predictors of Time 2 co-rumination. The interaction between gender and the preoccupied attachment style was again marginally significant.

Interpretation of the Findings

Research Literature

The factors of attachment styles, expectations of rejection, and gender role orientation were the predicting factors hypothesized to be related to co-rumination at a second time point. In this section, the fit between hypotheses based on past literature and the current findings is considered.

Correlations Between Variables

Correlations between study variables were examined. Time 1 co-rumination and Time 2 co-rumination were significantly and positively correlated, meaning that as Time 1 co-rumination increased, Time 2 co-rumination scores increase. The finding also means that adolescents' co-rumination scores were moderately stable over time. This finding is

consistent with past research (Rose et al., 2007). Time 1 co-rumination and Time 2 co-rumination also were significantly and positively correlated with femininity and nervous rejection sensitivity. As described in a following paragraph, these findings were consistent with hypotheses. Notably, though, the correlational analyses were less stringent than the regression analyses in which gender and Time 1 co-rumination were controlled, which were the primary analyses conducted in the current study.

Time 1 Co-Rumination and Gender as Control Variables

Time 1 co-rumination and gender served as control variables in all regression analyses. Consistent with past research, co-rumination was moderately stable over time (Rose et al., 2007) and girls co-ruminated more often than boys (Homa et al., 2014; Rose et al., 2016). These findings mean that girls and adolescents who co-ruminate at Time 1 are more likely than other adolescents to co-ruminate at Time 2, which would increase risk for depressive symptoms. With these control variables, the other predictors in the regression analyses had to predict Time 2 co-rumination over and above the effects of Time 1 co-rumination and gender in order to be significant. Accordingly, the regression analyses provided a relatively stringent test of the relations between the predictors and Time 2 co-rumination.

Attachment and Co-Rumination

The present study considered attachment styles (secure, dismissing, preoccupied) as predictors of Time 2 co-rumination. The Homa et al. (2014) study found the preoccupied attachment style was not related to the tendency to co-rumination and did not specifically assess a secure attachment style. In the current study, the main effect of a preoccupied attachment style on Time 2 co-rumination also was not significant. Homa et

al. also tested the relationship of the avoidant style of attachment (similar to the dismissing style in the present study) and co-ruminating, which was found to be significant and negative. In contrast to the current study, the dismissing style did not predict Time 2 co-rumination.

Differences in the Homa et al. (2014) and the current study could be due to the use of different measures and/or the control variables. First, the Homa et al. study used the Experiences in Close Relationships (ECR; Brennan et al., 2000), while the current study used the BSQ (Furman & Wehner, 1999). There are several differences between the two measures. For example, the ECR (Brennan et al., 2000) assessed attachment in relationships with overall relationships, while the BSQ (Furman & Wehner, 1999) assessed attachment with parents. Second, the current study used different control variables in analyses. In the current study, Time 1 co-rumination and gender were controlled, whereas in the Homa et al. study, the friend's attachment (avoidant attachment or anxious attachment) was controlled. Last, the present study predicted co-rumination at a later time point, whereas the Homa et al. study included only one time point. Significant effects are more difficult to detect over time than concurrently.

Rejection Sensitivity and Co-Rumination

The present study also considered angry and anxious expectations as predictors of Time 2 co-rumination. Goldner et al. (2019) tested the implications of angry and anxious expectations of rejection for experiences in close relationships. In the Goldner et al. study, angry expectations of rejection were related to adolescents talking less about their problems to a friend and to lower levels of intimacy. Anxious expectations of rejection also were related to lower levels of intimacy. Given the similarities between talking about

problems and intimacy with co-rumination, it was expected that both angry and anxious expectations of rejection would be related to co-rumination in present research. In fact, the correlation analyses indicated anxious expectations of rejection were associated with Time 1 co-rumination and Time 2 co-rumination. In terms of the target population, these findings suggest that adolescents with anxious expectations of rejection are at risk for co-ruminating, not only for at the current time point but also at a later time point. However, the correlational analyses are less stringent than the regression analyses. In the regression analyses, neither angry nor anxious expectations of rejection predicted Time 2 co-rumination in the more stringent regression analyses.

Difference in the studies may have contributed to the different findings. There were some similarities. In both studies, the CRSQ (Downey et al., 1998) was used, and both studies controlled for gender. However, the Goldner et al., (2019) study assessed rejection expectations and the friendship variables at one time point, whereas the present study was longitudinal. In the current study, Time 2 co-rumination was predicted while controlling for Time 1 co-rumination (in addition to gender), providing a more stringent test of the relationship.

Gender Role Orientation and Co-Rumination

The present study also tested whether gender role orientation was related to co-rumination at a later time point. Although no previous research had considered associations of masculinity and femininity with co-rumination, Renk and Creasey (2003) studied the relationship of masculinity and femininity with problem-focused coping and emotion-focused coping. Findings related to emotion-focused coping were relevant because rumination is a component of emotion focused coping and co-rumination is

considered an extension of rumination (Nolen-Hoeksema et al., 2008). Renk and Creasy found that masculinity was not related to emotion-focused coping, but that femininity was related to greater emotion-focused coping. Accordingly, in the present study, femininity was expected to be related to Time 2 co-rumination. Consistent with the Renk and Creasey study, masculinity did not predict Time 2 co-rumination. Also consistent with the Renk and Creasey study, in the correlational analyses, femininity was related to Time 1 co-rumination and time 2 co-rumination. However, using the more stringent regression analyses, femininity did not predict Time 2 co-rumination.

The unexpected findings could have emerged because of the control variables or the study design. In the current study, Time 1 co-rumination and gender were controlled. There were no covariates in the Renk and Creasey (2003) study. In addition, the current design was longitudinal. The Renk and Creasey study assessed the variables only at one time point.

The Role of Gender

The present study considered the role of gender in terms of mean-level differences between girls and boys for all constructs and in terms of gender as a moderator of the associations between the predictor variables and Time 2 co-rumination. Regarding mean-level differences, some findings were consistent with previous research. In previous research, girls endorsed greater co-rumination than boys (see Rose, 2002; Homa et al., 2014; Schwartz-Mette & Smith, 2018). Similar to previous research, the current study also found that adolescent girls reported greater co-rumination at Time 1 and Time 2 than adolescent boys. These findings suggest that girls are at a greater risk than boys for co-rumination and associated emotional problems

In terms of attachment, Hazan and Shaver (1987) and Nelis and Rae (2009) found no significant differences between girls and boys for secure, preoccupied, or dismissing attachment. The findings of the current study were consistent with the past research indicating no significant differences between girls and boys in secure, preoccupied, or dismissing attachment styles.

Regarding expectations of rejection, past research indicated mixed results. Several studies (Croft & Zimmer-Gembeck, 2014; Scharf et al., 2014) found no gender differences for angry or anxious expectations of rejection. However, Zimmer-Gembeck et al. (2021) found that girls reported greater anxious expectations of rejection than boys. The present study also found that girls reported anxious expectations of rejection more than boys. Conflicting with past research, the present study also found that boys reported greater angry expectations of rejection than girls. Girls reporting greater anxious expectations for girls and boys reporting greater angry expectations for boys suggests risks for both girls and boys as both types of rejection sensitivity are related to a range of adjustment problems.

Last, gender differences were tested for gender role orientation. In past research, Rogers et al. (2017) and Rogers et al. (2020) found that masculinity was higher in boys than girls and that femininity was higher in girls than boys. The findings of the current study were consistent with past research and, as expected, boys reported higher masculinity than girls and girls reported higher femininity than boys.

In terms of gender as a moderator of the associations between the predicting variables and Time 2 co-rumination, only one interaction approached significance. The interaction between a preoccupied style and gender was a marginally significant predictor

(p = .05) of Time 2 co-rumination. In the current study, preoccupied attachment was expected to be a positive predictor of Time 2 co-rumination. In facts, for boys, preoccupied attachment was a positive predictor of Time 2 co-rumination. However, the effect for boys was not significant. For girls, preoccupied attachment was negatively related to Time 2 co-rumination. These findings provide some suggestion that preoccupied attachment could be a risk factor for boys and a protective factor for girls in terms of developing a co-rumination style.

However, these results should be interpreted with caution. As noted, the effect of the interaction was only marginally significant and the simple slopes for girls and boys were not significant. In addition, the full step of the regression analysis that included this interaction was not significant. Also, in the backward elimination model, the interaction was included as the final model, but the effect again was only marginally significant. Although the current study had a relatively large sample, future research could test this interaction with a larger sample and more power to provide a stronger test of whether the interaction is meaningful. Alternatively, the effect may have emerged due to Type 2 error given that multiple analyses were conducted.

Theoretical Frameworks

Attachment Theory

Bowlby's (1969/1982, 1973, 1980) maternal deprivation theory (later referred to as attachment theory) placed an emphasis on a caregiver's role on childhood experiences. However, findings of the present study indicated no significant relation between attachment and co-rumination at a second time point. As noted, one reason why different results emerge across different studies may be due to the different assessments of

attachment in different studies. In addition, the present study assessed attachment to "parents" rather than assessing attachment to mothers and fathers separately (as in Doyle et al., 2009). Different attachment styles can develop with fathers and mothers. For example, secure attachments have been found to be more common with mothers than fathers (Freeman & Brown, 2001). Attachment to one parent may be more associated with co-rumination. Perhaps a stronger effect would emerge for attachment with mothers than fathers as Bowlby emphasized the importance of attachment to primary caregivers, which tend to be mothers.

Rejection Sensitivity Theory

Rejection sensitivity theory focuses on an individual's response to rejection or perceived rejection. While Downey and Feldman (1996) proposed that rejection sensitivity can impact interpersonal relationships, the present study found that neither angry nor anxious expectations predicted co-rumination 9 months later. Findings of the present study were not congruent with findings indicating that anxious expectations limited participating in social situations (Downey & Feldman, 1996; Goldner et al., 2019). Accordingly, the findings of the present study were not consistent with theory or empirical research related to rejection sensitivity. Findings may have been inconsistent due to the assessment of the second time point along with controlling for gender.

Gender Role Orientation

In terms of gender role orientation, building on findings indicating femininity is associated with emotion focused coping (including rumination), femininity was also expected to be related to co-rumination (Li et al., 2006). The current study partially supported these findings as femininity was related to co-rumination in the correlational

analyses, but co-rumination was not a significant predictor of Time 2 co-rumination in the regression analyses.

Limitations of the Study

There were several limitations of this present study. First, the data set was collected between the years 2007 and 2009. This creates two limitations. First, the date of data collection, may have impacted the generalizability to adolescents at the present time. Data could be collected again addressing similar questions to determine if the results are the same over time. Moreover, it is not known how experiencing the COVID-19 pandemic may affect adolescents' peer relationships. In addition, because archival data were used, I did not have the ability to control multiple aspects of the researching, including the obtaining of consent and assent, and running data collection sessions. Also, I could not give input regarding sample, variables, and measures used.

Second, the sample included participants who completed the surveys during the defined time and in a laboratory setting and again at a second time point. Participants who completed the questionnaires at the second time point may be more conscientious than adolescents who did not complete the second assessment. In addition, they may have had more involved parents and greater resources that facilitated parents driving them or helping them coordinate getting to the laboratory.

Third, there was an oversampling of African American students. Although future studies may address co-rumination specifically among African American adolescents, it was beyond the scope of the present study to examine race differences. Accordingly, it is not known whether the findings generalize specifically to Black or White adolescents.

Recommendations

In the current study, the variables predicted approximately 34% of Time 2 co-rumination. However, this percent of variance accounted for was largely due to the control variables, Time 1 co-rumination and gender. The only other predictor included in the best model, according to the backwards elimination process, was a marginally significant interaction between gender and preoccupied attachment. Probing this interaction indicated preoccupied attachment was a positively related to Time 2 co-rumination for boys and negatively related to co-rumination for girls. However, neither simple slope was significant. These effects should not be overinterpreted.

Future research could work to identify predictors of co-rumination more effectively. Some of these factors may be specific to youth who have experienced the COVID-19 pandemic and stay-at-home order. For example, the pandemic may have led to increases in anxiety and less opportunities for in-person contact with peers but paired with more opportunities for social interaction through a digital format (e.g., texting, video chatting). These factors could affect adolescents' engagement in co-rumination. Also, additional predictor factors such as self-esteem, quantity versus quality of friendships, academic achievement, and parental support and conflict could be considered. Studying different age groups (younger children, young adults) may provide additional information about predictors of co-rumination. The sample could also include a larger, more diverse sample with a smaller percentage of European Americans than the current study used. Adopting a qualitative approach, such as identifying themes in the friends' discussion, may give further information regarding predicting factors of co-rumination.

Implications

The present study examined possible predicting factors of co-rumination in adolescents, which then could be used to promote social change by a variety of stakeholders. The present study did not that find attachment style, expectations of rejection, or gender role orientation predicted co-rumination at a second time point. There was a suggestion that the interaction between the preoccupied attachment style and gender might predict co-rumination. However, support for this interaction was not strong and these findings need to be replicated before undertaking intervention efforts based on this finding.

In fact, gender and earlier co-rumination were the strongest predictors of co-rumination 9 months later. These findings are not novel, but they replicate past research (Rose et al. 2007, 2014), which highlight the importance of considering gender and earlier co-rumination as important aspects of intervention. Intervening with co-rumination, with a focus on girls, earlier in development, could prevent increases in Time 2 co-rumination. Interventions also could help adolescents who co-ruminate to learn to cope with problems more effectively to disrupt the stability of co-rumination over time.

There are positive social change implications of the current research. At an individual level, adolescents can be helped by coaching youth to move away from repeatedly talking about problems to effective problem solving. This change can occur within the family system with parental training of modeling effective problem-solving solutions in place of co-ruminating and in the school system based on staff and teacher training. The current findings also suggest that such efforts may target girls and adolescents who already have a co-ruminative style. The study was not specifically

designed to facilitate social change at the family, organizational, or societal levels. However, there are indirect benefits of fostering more positive well-being among adolescents. Well-adjusted adolescents could contribute to better-functioning families. In addition, if better adjustment among adolescents carry to adulthood, this could mean more effective organization (e.g., fewer days of work lost due to mental health problems) and society consisting of more engaged well-adjusted members.

Conclusion

The present study investigated possible predicting factors of co-rumination in adolescents' friendships over a 9-month period. Time 1 co-rumination was a positive and significant predictor of Time 2 co-rumination; gender also was a predictor with girls being more likely to co-ruminate at Time 2 than boys. A marginally significant interaction was found between gender and preoccupied attachment but support for this interaction was not compelling.

Given that Time 1 co-rumination and gender were the best predictors of adolescents' co-rumination at Time 2, intervening with youth prior to adolescence could disrupt co-rumination becoming a stable response to problems. Coaching youth to problem-solve more effectively before a co-ruminative style develops could be useful. If effective, this could lead to lower co-rumination, which could lessen risk for developing internalizing problems, such as depression and anxiety. Real-world applications include that working with adolescents prior to their developing a co-ruminative style should lessen co-rumination in adolescent friendships, thus promoting social change. Moreover, improving adolescent's emotional well-being with less anxiety and depression by

intervening with co-rumination may lead to the ability of problem-solving as adults, which impact adult activities, in the work place, and family.

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Appendix A: CITI Training through the University of Missouri

CITI PROGRAM

Completion Date 20-Feb-2020
Expiration Date 19-Feb-2023
Record ID 35490940

This is to certify that:

Rebecca Smith

Has completed the following CITI Program course:

SBR - Basic (Curriculum Group)
SBR Group (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of Missouri-Columbia

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w2a42ef4d-b067-4386-8d2a-1041a889383d-35490940

Appendix B: Co-Rumination Questionnaire (Rose, 2002)

When We Talk About Our Problems

Think about the way you usually are with your best or closest friends who are girls if you are a girl or who are boys if you are a boy and circle the number for each of the following statements that best describes you.

1. We spend most of our time together talking about problems that my friend or I have.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

2. If one of us has a problem, we will talk about the problem rather than talking about something else or doing something else.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

3. After my friend tells me about a problem, I always try to get my friend to talk more about it later.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

4. When I have a problem, my friend always tries really hard to keep me talking about it.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

5. When one of us has a problem, we talk to each other about it for a long time.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

6. When we see each other, if one of us has a problem, we will talk about the problem even if we had planned to do something else together.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

7. When my friend has a problem, I always try to get my friend to tell me every detail about what happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

8. After I've told my friend about a problem, my friend always tries to get me to talk more about it later.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

9. We talk about problems that my friend or I are having almost every time we see each other.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

10. If one of us has a problem, we will spend our time together talking about it, no matter what else we could do instead.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

11. When my friend has a problem, I always try really hard to keep my friend talking about it.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

12. When I have a problem, my friend always tries to get me to tell every detail about what happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

****

When we talk about a problem that one of us has....

1. ... we will keep talking even after we both know all of the details about what happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

2. ... we talk for a long time trying to figure out all of the different reasons why the problem might have happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

3. ... we try to figure out every one of the bad things that might happen because of the problem.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

4. ... we spend a lot of time trying to figure out parts of the problem that we can’t understand.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

5. ... we talk a lot about how bad the person with the problem feels.

1	2	3	4	5

Not At All True	A Little True	Somewhat True	Mostly True	Really True

6. ... we'll talk about every part of the problem over and over.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

When we talk about a problem that one of us has...

7. ... we talk a lot about the problem in order to understand why it happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

8. ... we talk a lot about all of the different bad things that might happen because of the problem.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

9. ... we talk a lot about parts of the problem that don't make sense to us.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

10. ... we talk for a long time about how upset is has made one of us with the problem.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

11. ... we usually talk about that problem every day even if nothing new has happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

12. ... we talk about all of the reasons why the problem might have happened.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

13. ... we spend a lot of time talking about what bad things are going to happen because of the problem.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

14. ... we try to figure out everything about the problem, even if there are parts that we may never understand.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True

15. ... we spend a long time talking about how sad or mad the person with the problem

feels.

1	2	3	4	5
Not At All True	A Little True	Somewhat True	Mostly True	Really True