

Jealousy in Close Relationships Among Emerging Adults

by

Katrina Poetzl Blomquist

Department of Psychology and Neuroscience  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
Martha Putallaz, Supervisor

\_\_\_\_\_  
James Moody

\_\_\_\_\_  
Philip Costanzo

\_\_\_\_\_  
John Curry

Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor  
of Philosophy in the Department of  
Psychology and Neuroscience in the Graduate School  
of Duke University

2014

ABSTRACT

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## **Abstract**

Using a mix of quantitative and qualitative measures, the current study examines how jealousy is experienced and expressed in close peer relationships during emerging adulthood. 193 college student participants (94 males, 99 females) described actual jealousy experiences, answered questions from a newly developed jealousy questionnaire, and completed questionnaires assessing individual characteristics. To better understand the phenomenon of jealousy, descriptive data are presented regarding a variety of jealousy features. An interest in the role of gender and relationship context prompted an examination of the association between gender, relationship context, and jealousy variables. Additionally, a number of hypotheses are tested regarding factors that affect jealousy intensity and frequency. Results suggest jealousy experiences during college are normative and similarly experienced by males and females. However, friendship jealousy has qualities that differ markedly from romantic relationship jealousy. Implications of these findings are discussed. Study limitations and ideas for future research are also addressed.

## **Dedication**

To my parents, who instilled in me a love of learning.

# Contents

Abstract.....	iv
List of Tables .....	xi
List of Figures .....	xii
Acknowledgements .....	xiii
Introduction .....	1
The Importance of Studying Peer Relations .....	1
Jealousy as a Peer Relationship Variable.....	3
Studying Jealousy .....	4
Definitions of Jealousy .....	6
Functions of Jealousy .....	7
Emotional Components of Jealousy.....	9
Cognitive Components of Jealousy.....	10
Behavioral Components of Jealousy .....	11
Experienced Jealousy Versus Expressed Jealousy .....	12
Factors Associated with Experienced Jealousy .....	12
Qualities of the Individual .....	12
Qualities of the Jealousy Target and the Partner .....	15
Qualities of the Dyadic Relationships .....	16
Larger Peer Group Variables .....	18
Situational Variables .....	18

Factors Associated with Expressed Jealousy .....	19
Jealousy and Negative Outcomes .....	21
Jealousy and Positive Outcomes .....	23
Summary .....	24
The Current Study .....	26
Research Questions and Hypotheses.....	27
Method.....	33
Participants .....	33
Selection Criteria.....	33
Final Study Sample.....	34
Measures and Descriptions .....	35
Order of Measures .....	35
The Jealousy Experiences Questionnaire (Created For This Study) .....	36
Relationship Context Categorization .....	38
Follow-up Questions .....	40
Study Variables.....	45
Demographic Questionnaire (Created For This Study).....	53
Relationship Convoys- Current and Future (Kahn & Antonucci, 1980) .....	54
Adult Attachment Questionnaire (Hazan & Shaver, 1990).....	54
Rosenberg Self-Esteem Questionnaire (Rosenberg, 1965).....	55
Positive Peer Experience Questionnaire (Created For This Study) .....	55
Procedures .....	56

Data Analytic Plan.....	56
Preliminary Analyses and Descriptives .....	56
Final Analyses and Roadmap of Results.....	57
Results.....	58
Missing Data.....	58
Relationship Between Relationship Context and Gender .....	58
Main Study Analyses .....	59
The Phenomenon of Jealousy.....	59
Summary .....	61
Summary .....	62
Summary .....	65
Summary .....	68
Summary .....	70
Factors Affecting Jealousy Intensity .....	71
Individual Background Variables: Individual Characteristics.....	71
Individual Background Characteristics: Jealousy Target Characteristics.....	73
Dyadic Background Variables.....	74
Incident Variables .....	76
Summary .....	77
Factors Affecting Jealousy Frequency .....	78
Individual Background Variables.....	78
Individuals Reporting No Jealousy .....	80



Individuals Reporting Two Jealousy Experiences .....	80
Discussion.....	82
The Phenomenon of Jealousy.....	82
Likelihood of Experiencing Jealousy .....	82
Gender and Relationship Context.....	83
Involved Emotions .....	84
Jealousy Incident Characteristics .....	86
The Jealousy Target .....	88
Jealousy Behaviors.....	90
The Resolution .....	91
Jealousy Intensity.....	92
Individual Characteristics .....	92
Jealousy Target Variables .....	94
Dyadic Relationship Characteristics: Individual and Partner/Friend .....	94
Dyadic Relationship Characteristics: Individual and Jealousy Target .....	95
Dyadic Relationship Characteristics: Friend/Partner and Jealousy Target.....	95
Incident Variables .....	96
Jealousy Frequency.....	97
Individuals Reporting No Jealousy.....	99
Individuals Reporting Multiple Jealousy Experiences .....	100
Summary.....	102
Study Limitations and Future Directions.....	102

References.....	160
Biography .....	178

## List of Tables

Table 1: Hypothetical Situation Question Examples From the Friendship Jealousy Questionnaire.....	5
Table 2: Study Measures.....	36
Table 3: Jealousy Experience Questionnaire Variables.....	45
Table 4: Frequency of Jealousy Experiences by Relationship Context and Gender .....	59
Table 5: Emotional Experience of Jealousy.....	60
Table 6: Characteristics of the Jealousy Incident (Coded).....	62
Table 7: The Jealousy Target.....	63
Table 8: Jealousy Behaviors.....	66
Table 9: The Resolution .....	69

## List of Figures

Figure 1: Current Study Model .....	27
Figure 2: Examined Components of the Recounted Jealousy Experience .....	27
Figure 3: Final Study Sample with Exclusions.....	34
Figure 4: Relationship Context Categories with Elaborated Descriptions .....	39
Figure 5: Recategorized Relationship Classification .....	40

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## **Introduction**

### ***The Importance of Studying Peer Relations***

Peers have long been recognized as aiding in the promotion of healthy development in a variety of domains, including cognitive development (Piaget, 1932; Vygotsky, 1978), social development (Bandura & Walters, 1963; Hartup, 1976), and emotional development (Sullivan, 1953). Relationships with peers provide something unique to the developing individual, as peers have been found to contribute to later well-being and adjustment above and beyond influences from other sources, including families, schools and neighborhoods (Rubin, Bukowski, & Parker, 2006). Peers play an especially important role starting in adolescence by helping adolescents achieve developmental goals such as identity development and the formation of close, intimate relationships (Brown, Mory, & Kinney, 1994; Erikson, 1968). Peers are also important sources of social support, especially during times of stress. During adolescence, peers become primary attachment figures, as youth spend more time with friends and peers and less time with families, particularly parents (Corr, Nabe, & Corr, 2006; Furman & Buhrmester, 1985; Larson & Richards, 1991; Lempers & Clark-Lempers, 1992). Moreover, according to their own report, adolescents spend more time in conversation with peers than in any other single activity, and they also describe themselves as most happy when talking to peers (Csikszentmihalyi, Larson, & Prescott, 1977). Adolescents may also derive normative information from their peers, turning to peers to help make sense of the myriad changes that occur at this time (Brown, 1990).

For youth who choose to pursue educational advancement, the transition to college marks an important life event. This period is often referred to as “emerging adulthood”. Emerging adulthood has been coined by researchers as a unique developmental period spanning the late teens through early adulthood. Nestled between the dependency of childhood and adolescence



and the responsibilities of adulthood, youth use this time to engage in identity exploration that provides the foundation of their later adult roles (Arnett, 2000; Johnson, Gans, Kerr, & Lavalley, 2010). This transition involves many changes, ranging from increased academic responsibilities to disruptions and reformulations of social networks. These changes often result in stress, which can become chronic (Towbes & Cohen, 1996).

Healthy relationships with peers can help youth adjust to the changes occurring during this vulnerable time. Given that youth in college are surrounded by peers in their living and academic environments, it is not a surprise that peer relationships tend to flourish during this time. Friendships are formed between both sexes. Mixed-sex friendship groups, which are often first seen in early adolescence, may expand during the college years. Recent studies indicate that more than 90% of high school students report at least one current cross-sex friend (Hand & Furman, 2009; McDougall & Hymel, 2007), and this number increases in college, as all undergraduate students reported at least one cross-sex friendship (Buhrke & Fuqua, 1987; Rose, 1985). Romantic relationships also become more common than during earlier developmental periods (Johnson, Brady, McNair, Congdon, Nizik & Anderson, 2007; Markiewicz, Lawford, Doyle & Hagart, 2006). In addition, friendships and romantic pairings tend to be characterized by higher levels of stability and emotional connectedness than those at younger ages (Carver, et. al., 2003; David & Todd, 1982; Hazan & Shaver, 1987; Schlenker & Britt, 1996).

In addition to the role positive peer relationships play in contributing to healthy development, researchers have also been interested in peer relations because problematic peer relationships have been linked to both concurrent and future maladjustment. For example, youth who are actively disliked or rejected by their peers may experience problems in multiple domains of functioning, including academic, psychological, and behavioral domains (see Asher, Hymel, & Renshaw, 1984; Coie & Dodge, 1998; Parker & Asher, 1987). These problems can also

contribute to difficulties adapting to college. For example, social adjustment difficulties during college have been linked to peer problems such as loneliness and isolation (Mounts, Valentiner, Anderson, & Boswell, 2006). Peer problems can also disrupt friendships which, in turn, can affect well-being and adjustment. Among college-aged students, problems involving intimate relationships are among the most frequently reported stressors (Jackson & Finney, 2002).

### ***Jealousy as a Peer Relationship Variable***

One interpersonal variable that has consistently been linked to maladjustment and relationship dissatisfaction is jealousy. Jealousy has been defined as a negative cognitive, emotional or behavioral reaction triggered by a valued partner's actual or anticipated interest in, or relationship with, another person who is regarded as an interloper (Guerrero & Andersen, 1998). Jealousy may be elicited because an interloper threatens to infringe upon a valued relationship, thus reducing the relationship rewards an individual experiences. In addition, jealousy may arise because there is also an implied unfavorable social comparison and inferred rejection of the individual experiencing jealousy. The affective experience of jealousy is often described as a blend of emotions, which include anger, fear, anxiety, and sadness (Bringle & Buunk, 1985; Harris & Darby, 2010).

As well as being an aversive emotional experience, jealousy has been linked to a number of adjustment difficulties, such as greater conflict with friends, more victimization by peers, loneliness, depression, and low self-esteem (e.g., DeSteno, Valdesolo, & Bartlett, 2006; Parker & Gamm, 2003; Parker, Low, et al., 2005). Jealousy also has been associated with engagement in physical and relational aggression. At extreme levels, jealousy can be linked to psychopathology and violence, such a domestic abuse and homicide (Harris, 2003; Mullen & Martin, 1994). Jealousy also affects the quality of relationships. For example, jealousy is a major contributor to

relationship dissatisfaction (Andersen, Eloy, Guerrero, & Spitzberg, 1995) and relationship termination (White & Mullen, 1989).

## ***Studying Jealousy***

Jealousy has been most frequently studied in adult romantic relationships. Less research has been conducted on jealousy during earlier developmental periods or within alternate peer relationships, such as friendships. A few researchers have started to examine jealousy within friendships (e.g., Lavalley & Parker, 2009; Parker, Low, Walker, & Gamm, 2005; Roth & Parker, 2001), but these studies have been limited by only examining same-sex friendships. In addition, previous research has tended to focus solely on jealousy experiences occurring in only one type of peer relationship. Since the college setting is ripe for the initiation and maintenance of peer relationships, including platonic friendship, exclusive and non-exclusive romantic relationships, it is a natural context in which to investigate the jealousy experiences occurring within multiple types of peer relationships. The presence of multiple relationships during this developmental period may lead to competing demands of time, intimacy, and loyalty, which provide many opportunities for third parties to impinge upon an existing relationship. Under these conditions, jealousy may readily occur.

Hypothetical jealousy situations are the most commonly used methodology for studying jealousy. The participant is presented with a hypothetical scenario in which most elements of the situation are prescribed (e.g., the individuals involved, the sequence of events, and the outcome of the situation) and is asked to report how jealous he or she would feel. See Table 1 for sample hypothetical questions from the Friendship Jealousy Questionnaire (Parker, Low, Walker, & Biggs, 2005).

**Table 1: Hypothetical Situation Question Examples From the Friendship Jealousy Questionnaire**

1. You call your best friend several times to see if he wants to go see a new movie, but when you finally get through, he says that another guy that you both know already asked him to go see it and he agreed.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Would <u>never</u> be	Might be a little	Would be	Would probably	Would
jealous over that	jealous	somewhat	be pretty jealous	definitely be
		jealous		really jealous

2. You and your best friend are in the same class, when the instructor asks the class to pair up with a study partner for the semester. Before you have a chance to talk with him, your best friend agrees to be study partners with another guy that you both know.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Would <u>never</u> be	Might be a little	Would be	Would probably	Would
jealous over that	jealous	somewhat	be pretty jealous	definitely be
		jealous		really jealous

While these types of research studies have been important in elucidating factors associated with jealousy and equipping researchers with instruments with high internal validity, this methodology has distinct limitations. The situation presented in the hypothetical scenarios may not be the most salient jealousy experience for participants. For example, gender-specific forms of questionnaires are often given to males and females, with a pronoun change being the only change between forms. In the real world, the types of situations that make males and females jealous may differ, but this is not reflected in the questionnaire content. The external

validity of hypothetical situation methodology is further weakened when pre-defined characteristics mask naturally-occurring heterogeneity. For instance, romantic relationship research tends to focus exclusively on committed, exclusive partnerships. In reality, romantic relationships are not a homogenous entity, especially in emerging adulthood (Collins, Welsh, & Furman, 2009). Instead, individuals are involved in a variety of romantic contexts, including crushes, non-exclusive dating, and hook-ups. Failing to include these possible romantic contexts in studies of jealousy limits the ability to understand the full range of jealousy experiences.

Descriptive studies that allow for open-ended responses to a wide variety of aspects of jealousy situations are ideally suited to explore the phenomenon of jealousy. These types of studies provide an important complement to knowledge gained through traditional hypothetical situation methodology. However, few descriptive studies of jealousy exist. This research study aims to fill this gap in the literature by asking participants to provide information about multiple features of actual jealousy experiences.

### ***Definitions of Jealousy***

Jealousy has been variously defined. For example, some researchers describe jealousy as “any adverse reaction that occurs as the result of a partner’s extra-dyadic relationships that is real, imagined, or considered likely to occur” (Bingle & Buunk, 1991, p. 135). Other researchers highlight the importance of jealousy as a signal of a threat to a valued relationship, defining jealousy as, “actual or anticipated interest in or relationship with another peer, and based upon the target’s perception that the partner’s relationship with someone else threatens his or her own existing relationship” (Parker, Low, et. al, 2005). Jealousy involves two types of underlying threats. First, an individual may feel a threat to self, through unfavorable social comparisons with the third party (the “jealousy target”) or inferred rejection by the valued partner (Sharpsteen,

1995). Second, an individual may feel his or her relationship with the valued partner is threatened, either because of the worry the relationship will end or that it will diminish in quality (Bringle, 1991).

Critical to all definitions of jealousy is that there is a social triangle, comprised of the individual, his or her relationship partner, and a third party. This criterion helps distinguish jealousy from related emotions, such as envy. Envy, described as the wish to obtain something that another individual possesses, involves two individuals. Jealousy, on the other hand, is the fear of losing something that one already has, and necessarily involves three people (Ben-Ze'ev, 2010). Another critical component of jealousy is that it stems from perceived or actual rejection. The type of rejection that elicits jealousy is considered unique from other types of rejection, in that an individual's interpersonal loss or diminished relationship with the partner involves another's interpersonal gain (Parrott, 1991; Mathes, Adams, & Davies, 1985).

### ***Functions of Jealousy***

Strong social bonds ensure the fulfillment of basic human needs as well as higher-order needs such as emotional closeness. Healthy relationships also predict physical and psychological well-being (Baumeister & Leary, 1995; Cacioppo et al., 2002). Thus, the protection of these bonds represents an important evolutionary advantage and may be innately programmed within human beings (MacDonald & Leary, 2005). Studies investigating the connection between neural structures within the brain and emotional experiences have found that physical pain and negative emotions arising from social exclusion engage the same brain regions (Panksepp, 2003). Thus, social events such as exclusion, which may underlie the experience of jealousy, are felt as painful (Panksepp, 2005).

Jealousy serves to trigger a set of adaptive behaviors that individuals may not otherwise display (Keltner & Haidt, 1999). Upon experiencing jealousy, individuals may be motivated to take action to prevent a third party from disrupting an important bond with a valued partner, thus protecting this relationship (Harris, 2003). The function of these behaviors is to reestablish the social bond and increase one's attractiveness as a social partner (Legerstee, Ellenbogen, Nienhuis, & Marsh, 2010). These behaviors may also communicate to the valued partner that his or her interest in, or behaviors towards, the third party are not acceptable (Barelds & Dijkstra, 2007).

Paradoxically, some behaviors by jealous individuals may have the opposite effect—serving to further alienate the valued partner rather than to protect this relationship. Whether jealousy behaviors have a positive or negative result may depend on factors such as the types of behaviors engaged in, the social skill with which these behaviors are employed, whether the partner is aware of them, or the way in which the valued partner receives them. Recent work has also posited that rumination helps explain the link between romantic jealousy and relationship dissatisfaction (Elphinston et al., 2013).

Another function that expressing jealousy may serve is to set boundaries and reduce uncertainty. In the family systems literature, jealousy is seen as an individual's emotional reaction to a boundary ambiguity, or a situation in which family members are uncertain as to who performs what roles and tasks within the family (Boss & Greenberg, 1984). Similarly, jealousy may be seen in friendships or romantic relationships as a response to the uncertainty surrounding the level of commitment and responsibility that one partner owes another. This function of jealousy may be especially salient in relationships in which the specific expectations and levels of commitment are not well defined, such as non-exclusive romantic relationships and cross-sex friendships. By expressing jealousy and gauging the partner's response, an individual may obtain a clearer sense of the status of his or her relationship and the accompanying expectations. This

process can be seen when the expression of jealousy leads to conversations about the “rules” of the relationship. Individuals may also purposefully engage in behaviors designed to elicit jealousy in their partners as a way to determine the value their partner places on the relationship.

### ***Emotional Components of Jealousy***

Theories of emotional development consider emotions such as jealousy, shame, and embarrassment to be complex emotions, in contrast to more basic emotions, such as sadness or fear. Complex emotions are experienced only after certain emotional and cognitive processes have developed. Specifically, the individual must have a strong affiliative bond and a developed concept of self (Hobson, 2010; Lewis & Ramsay, 2004).

Whereas jealousy is often thought of as a distinct affective state, some conceptualize jealousy as being comprised of component emotions such as anger, fear, and sadness (Harris & Darby, 2010; Hupka, 1984). The precise blend of emotions felt may depend on the situation. For example, if a valued relationship is lost due to a gradual process of drifting apart, sadness may be the most acute emotion, whereas loss of a relationship as a result of a betrayal may be accompanied by feelings of anger. How much control an individual has over the situation is another factor. When an individual feels he or she has little control over the situation, sadness, passivity, or helplessness may result. Conversely, when an individual feels he or she can affect the situation, anger may be the more natural emotion (Stearns, 1993).

The emotions underlying jealousy can be further differentiated, as research suggests that intensity and frequency represent distinct components of an affective state (Diener, Larsen, Levine, & Emmons, 1985; Guerrero & Afifi, 1999; Schimmack & Diener, 1997). Affect intensity is a stable individual characteristic defined in terms of the typical strength of an individual's response across emotion categories (Larsen & Diener, 1987). Affect frequency refers



to how often an individual experiences an emotion, which relates to an individual's threshold for emotional activation. For example, "short-fused" individuals may be easily triggered into experiencing an emotion, and "hot-tempered" individuals may be high on both affective intensity and frequency.

### ***Cognitive Components of Jealousy***

The subjective experience of jealousy is greatly influenced by associated cognitive processes. At the most basic level, an individual has to perceive that a valued partner has turned his attention to another individual in order for jealousy to be triggered (Harris, 2003). According to Lazarus' (1991) theory of emotions, used to describe the progression of jealousy, this perception represents the first stage of cognitive appraisal, which is an initial step in determining how much jealousy an individual experiences. Following the perception of a general threat to the relationship, the individual engages in secondary appraisals to determine the scope of the threat and possible coping strategies. At this point, if the situation continues to be perceived as threatening, the individual may experience high levels of jealousy, and varying degrees of anger, fear, and sadness. Recent work has also found that in addition to determining threat severity, individuals are also attuned to whether the jealousy threat suggests the presence of a specific rival and whether the threat implies deception on the part of the valued partner (Sobraske, Boster, & Gaulin, 2013).

Different methodological approaches to studying jealousy evaluate different stages of cognitive appraisals. Previous research has mainly employed hypothetical questions to assess jealousy, posing situations thought to be jealousy-provoking and asking participants to anticipate how they would respond. This technique captures the initial stages of cognitive appraisals, when information regarding the scope of the jealousy threat is limited. Few studies ask participants to

report actual jealousy experiences, which correspond to the second stage of cognitive appraisals. This is a significant limitation, as research has shown that predictions of behavior in hypothetical situations do not tend to correspond well to behavior in actual situations (e.g., Ajzen, Brown, & Carvajal, 2004; Harris, 2003). The current study aims to address this gap in the literature by asking participants to report actual jealousy experiences.

### ***Behavioral Components of Jealousy***

The expression of jealousy refers to behaviors and actions taken by the individual experiencing jealousy. Specifically, behavioral expressions of jealousy are goal-directed attempts to influence the self, the partner, or the situation to preserve the relationship, reduce uncertainty, or restore self-esteem (Buunk & Bringle, 1987; Guerrero & Afifi, 1999; Guerrero et al., 1995). Examples of jealousy behaviors include: discussing feelings with one's friend/partner, verbal threats and aggression, ignoring or distancing oneself from one's friend/partner, expressing negative affect through body language, physical threats or violence, spying or snooping on one's friend/partner, confronting the jealousy target, spreading rumors about the jealousy target, or spying or snooping on the jealousy target. The advent of social media sites like Facebook has increased spying and snooping opportunities, as well as exposed individuals to ambiguous information about others' lives, which has been linked to heightened rates of jealousy and relationship dissatisfaction (Elphiston & Noller, 2011; Muise & Desmarais, 2009).

Jealousy behaviors have been grouped in a variety of ways. For example, Guerrero and colleagues (1995) differentiate interactive responses, which occur face-to-face with a partner, from general behavioral responses, which do not occur in face-to-face contexts and do not necessitate partner responses. These behaviors can also be categorized according to criteria such

as toward whom the action was directed, whether the actions were aggressive or non-aggressive, or how extreme the response was.

### ***Experienced Jealousy Versus Expressed Jealousy***

To distinguish between the emotional, cognitive, and behavioral components of jealousy, researchers have drawn a distinction between experienced jealousy and expressed jealousy. Experienced jealousy refers to the emotional and cognitive components associated with jealousy, whereas expressed jealousy refers to behaviors performed by an individual in response to the affective experience of jealousy (Afifi & Reichert, 1996).

Jealousy experience does not always lead to jealousy expression. Intervening factors influence if, and how, jealousy may be expressed. For example, within new relationships, positive, harmonious emotional expression is often used as a way to foster and protect the fledging relationship (Matsumoto, 1991). However, as relationships become more established, individuals are more likely to give and receive negative feedback (Knapp & Vangelisti, 1992). Over time, individuals experience and express jealousy more frequently, as well as report that they believe jealousy expression is more appropriate (Aune & Comstock, 1997).

### ***Factors Associated with Experienced Jealousy***

A number of factors have been shown to be related to the experience of jealousy, including: qualities of the individual, qualities of the jealousy target, qualities of the partner, larger peer group characteristics, and situational variables. Each category of factors will be discussed in turn.

#### **Qualities of the Individual**

Certain factors can lead to jealousy because they heighten one's likelihood to perceive threats in social situations. For example, low self-esteem can predispose an individual to expect

and perceive rejection by his or her relationship partner, even in ambiguous situations (Cole, Martin, Peeke, Henderson, & Harwell, 1998; Collins & Feeney, 2004; Lavallee & Parker, 2009; Parker, Low et al., 2005; Parker, McGuire, Rosen, & Underwood, 2009). Feeling rejected by one's partner can easily translate into jealousy if one believes that his or her relationship partner prefers a rival.

An individual's attribution style can also affect the degree of jealousy experienced. When an individual is assessing the situation to determine the scope of threat, actions that are viewed as caused by the partner, something the partner had control over and something intentionally committed by the partner lead to more feelings of jealousy (Bauerle, Amirkhan, & Hupka, 2002).

An individual's past attachment experiences have a complex relationship to jealousy. Securely attached individuals have a positive view of themselves, longer-lasting and more successful relationships, and lower levels of distrust (Kirkpatrick & Hazan, 1994). Given this profile, securely attached individuals are less likely to interpret ambiguous situations as jealousy-provoking, perhaps because they have a higher threshold for threat appraisal (Buunk, 1997; Radecki-Bush, Bush, & Jennings, 1998). However, when the jealousy threat is deemed certain, securely attached individuals respond with more jealousy and anger than insecurely attached individuals (Sharpsteen & Kirkpatrick, 1997). Insecurely attached individuals, on the other hand, perceive ambiguous situations as more jealousy-provoking than securely attached individuals, likely due to their negative relationship schema. However, insecurely attached individuals report lower levels of jealousy and associated emotions, such as anger and surprise, in the face of a certain jealousy incident (Buunk, 1997).

Finally, the question of whether there are gender differences in the experience of jealousy is of particular interest in the current study. Within romantic relationships, previous studies have

not consistently found that one sex experiences more jealousy than the other. However, there is one caveat to this general finding-- one of the most widely cited jealousy findings is that there is a gender difference in response to sexual and emotional infidelity (e.g., Buss, Larsen, Westen & Semmelroth, 1992; Daly & Wilson, 1988; Sagarin et al., 2003). Specifically, men experience more jealousy in the face of sexual infidelity as opposed to emotional infidelity, whereas women experience more jealousy when emotionally betrayed by a partner than when sexually betrayed. This finding has been found in studies employing both hypothetical scenarios and actual jealousy situations, as well as in studies using both continuous measures of jealousy and more traditional forced-choice jealousy responses (e.g., Edlund et al., 2006; Sagarin et al., 2012). However, this finding seems to be limited to heterosexual individuals; studies using homosexual and bisexual samples do not replicate these traditional sex differences (Scherer, Akers, & Kolbe, 2013).

Evolutionary explanations have been invoked to explain this difference. For males, the inherent uncertainty of paternity leads to a drive to restrict the sexual access of one's partner. In this way, the male can best ensure that children his partner bears are his biological offspring (Buss et al., 1992; Symons, 1979). Therefore, sexual infidelity represents a serious threat for males, and jealousy may serve as a tactic to prevent this type of infidelity from occurring (often referred to as "mate guarding") (Buss, 2006). On the other hand, women are sure of their biological link to their children and instead are thought to be more concerned with obtaining aid and resources from their partner (Cann et al., 2001; Penke & Asendorph, 2008). Emotional infidelity may signal that a mate is taking his resources elsewhere. Thus, feelings of jealousy among women may be more pronounced following a threat of emotional infidelity than a threat of sexual infidelity.

Within friendships, there are also reported gender differences with regards to levels of felt jealousy. In these contexts, females experience more jealousy than males (Parker, Low,

Walker, & Gamm, 2005). Females place a special emphasis on friendships to fulfill interpersonal needs. Within same-sex friendships, females report more validation, caring, help, guidance, closeness, security, self-disclosure, and intimacy than males (Maccoby, 1998; Parker & Asher, 1993; Rose & Rudolph, 2006). Given the high value females place on friendships, they may be more vigilant and vulnerable to circumstances that interfere with the quality of their experiences with friends (Brown, Way, & Duff, 1999; Crick & Grotpeter, 1995) and more easily interpret, and be upset by, overtures by a third party.

### **Qualities of the Jealousy Target and the Partner**

Particular qualities of the partner and the jealousy target may also influence the amount of jealousy an individual will experience. When the jealousy target is similar to the individual in terms of attributes or role in the valued partner's life, this is often perceived as threatening because the individual may fear that he or she will be replaced by the jealousy target (Broemer & Diehl, 2004). According to the domain relevance hypothesis (Salovey & Rodin, 1985), an individual will feel more jealousy when the jealousy target surpasses the individual in domains that the individual values or are relevant to his or her self-concept (Salovey & Rothman, 1991; Salovey & Rodin, 1985; Tesser, 1988). While the exact characteristics valued may be particular to the individual, there are some characteristics that are widely considered to be important. For example, studies with both adolescents and adults show that physical attractiveness is a common valued characteristic (Parker, Campbell, Kollat, & Lucas, 2008; Salovey & Rodin, 1984). Physical attractiveness may be especially important during the adolescent and early adult developmental periods, when rapid physical changes occur and body image concerns are heightened.

Another threatening situation can occur if the jealousy target is perceived to be attractive to the valued partner. In romantic relationships, this could occur when the jealousy target is

romantically available, and thus is a viable relationship alternative for the romantic partner. This can also occur when the jealousy target possesses characteristics believed to be important to the valued partner, even if these characteristics are not inherently valued by the individual (DeSteno & Salovey, 1996; Dijkstra & Buunk, 1998). Interestingly, this tendency extends to an individual's view of self-- individuals will alter the self-views to be more similar to a perceived romantic rival that the individual believed their partner found attractive (Slotter, Lucas, Jakubiak, & Lasslett, 2013).

No known research has examined how qualities of the jealousy target's social network influences the amount of jealousy experienced by the individual. It may be that the more the individual has knowledge of or closeness to the jealousy target, and shared social networks with the jealousy target, the more threatening the jealousy target is to the individual because of increased opportunities for the jealousy target and the valued partner to interact and become close. On the other hand, if the individual is a friend of the jealousy target, it may be that implicit "rules" of friendships, such as not pursuing a friend's romantic interest, provide some protection against the possibility of the jealousy target interfering with the relationship between the individual and the valued partner.

Characteristics of the valued partner also affect the jealousy an individual experiences. Within exclusive romantic relationships, individuals with partners who display commitment, openness, and transparency about their activities probably trust that their partners are not pursuing other relationships, which lessens the experience of jealousy.

### **Qualities of the Dyadic Relationships**

The type of relationship can also influence the experience of jealousy. For instance, individuals in exclusive romantic relationships may feel more frequent or intense jealousy than individuals in friendships. While the same definition of jealousy is applied to exclusive romantic

relationships, non-exclusive romantic relationships, and friendships, these three types of relationships have distinct characteristics that may influence the experience of jealousy. Exclusive romantic relationships have higher levels of exclusivity and emotional connectedness than friendships (Davis & Todd, 1982; Schlenker & Britt, 1996), illustrating the fact that exclusive romantic relationships often involve high levels of emotional intimacy in addition to exclusive sexual access. This puts exclusive romantic relationships at risk for two types of jealousy: emotional jealousy and sexual jealousy. Emotional jealousy has been defined as experiencing jealousy in response to a partner's feelings of closeness to another person (Knobloch, Solomon, & Cruz, 2001). Sexual jealousy refers to jealousy surrounding a partner's sexual involvement with or sexual interest in others (Guerrero, Spitzberg, & Yoshimura, 2004).

Platonic friendships do not have a sexual jealousy component, although they are subject to emotional jealousy. This is especially true for same-sex friendships which are common, stable, and intimate (Nezlek, 1993; Parker & DeVries, 1993; Rubin, Bukowski, & Parker, 2006). Cross-sex friendships are also prevalent, as nearly all undergraduate students reported at least one cross-sex friendship (Buhrke & Fuqua, 1987; Rose, 1985), and there were no sex differences in the likelihood of developing cross-sex friendships (Baumgarte & Nelson, 2009). When cross-sex friendships include romantic or sexual components, which have been found to be a frequent occurrence, sexual jealousy does become a factor (Afiffi & Faulkner, 2000). Non-heterosexual youth may experience similar romantic or sexual feelings in same-sex friendships. Non-exclusive romantic relationships (e.g. friendships involving a romantic interest, crushes, ex-exclusive romantic partners with whom there is still lingering romantic interest) represent a unique and understudied group. In these dyads, there may be feelings of emotional or sexual jealousy with or without a current relationship with the valued partner.



Research has shown that the better the quality of the relationship, the more jealousy is experienced in response to actual betrayal (Barelds & Barelds-Dijkstra, 2007). Better quality relationships are marked by closeness, commitment, trust, communication, and satisfaction (Collins, Welsh, & Furman, 2009; Sprecher, 1999; Wieselquist, Rusbult, Foster, & Agnew, 1999). Individuals in high quality relationships probably are highly motivated to protect these relationships, and individuals in low quality relationships may not place as high a value on their relationships and may not be as motivated to protect them.

Additionally, high quality relationships between the valued partner and the jealousy target may be particularly threatening to the individual. In the face of such a positive relationship, the individual's own relationship to the valued partner could appear negative in comparison, triggering a fear that the valued partner will replace the individual.

### **Larger Peer Group Variables**

One important factor affecting jealousy is the availability and attractiveness of relationship alternatives (Hansen, 1991; Rydell, McConnell & Bringle, 2004). Individuals with other relationship options may be less invested in one particular relationship, as they are able to access relationship rewards from a variety of sources. However, individuals who consider themselves to have fewer or unattractive relationship alternatives experience more jealousy than those who consider their relationship alternatives to be attractive (Rydell, McConnell & Bringle, 2004).

### **Situational Variables**

Theorists have long have differentiated between “normal” or “rational” jealousy and “morbid” or “pathological” jealousy, based on whether jealousy was elicited from a realistic threat to the valued relationship or whether it occurred in the absence of such a threat. Many

present-day researchers have categorized jealousy in the same manner, drawing a distinction between “reactive” jealousy versus “anxious” jealousy (Buunk & Dijkstra, 2001; 2006) or “fait accompli” jealousy versus “suspicious” jealousy (Parrott, 1991; 2001) based on the presence of a real versus imagined threat. Within both friendship and romantic relationships, relationship threats that involve real danger of the valued relationship ending or diminishing in quality are likely to evoke more jealousy than relationship threats that are recognized to be less severe.

### ***Factors Associated with Expressed Jealousy***

Experienced jealousy and expressed jealousy are two distinct, but related, components of the jealousy experience. Experienced jealousy, or the affective and cognitive experiences of jealousy, motivates an individual to engage in jealousy behaviors. In general, individuals experiencing higher levels of jealousy emotions and cognitions would be expected to engage in more jealousy behaviors than those who experience lower levels. However, a number of factors can intervene between the experience and expression of jealousy, making it more or less likely that an individual will engage in jealousy behaviors.

One factor relates to the social norms governing the appropriateness of jealousy within an individual’s peer group. Social norms are patterns of acceptable beliefs, attitudes, and behaviors (Axelrod, 1984). Individuals are influenced by dominant social norms and tend to seek out peers who share similar norms and engage in similar behaviors (Simons-Morton, 2007). Thus, peer groups whose members express jealousy may encourage individuals to engage in jealousy behaviors. The degree to which an individual’s partner or friend expresses jealousy within the relationship may also influence how appropriate the individual feels it is to engage in jealousy behaviors. The type of relationship also plays a role in determining the level of expressed jealousy. In particular, exclusive romantic relationships are prime contexts for jealousy

expression, since these relationships, by definition, involve an agreement that only one person fulfills the role of romantic partner. Compared to same-sex and cross-sex friendships, exclusive romantic relationships also tend to be relationships that have the most intense affect expression (Furman & Shoemaker, 2008).

Social norms may also serve to discourage the expression of jealousy. As mentioned previously, individuals may “hold back” negative affect more often in newer relationships, but express jealousy more frequently in established relationships as behavioral norms shift to allow for exchange of negative feedback (Aune & Comstock, 1997; Kanpp & Vangelisti, 1992; Matsumoto, 1991).

Another factor influencing the expression of jealousy involves the selection of certain jealousy behaviors over others. For example, jealous individuals often resort to indirect aggression as a way to achieve retaliatory or coercive ends without the social stigma of direct aggression (Bjorkqvist, 1994). In a large study of friendship jealousy among preadolescent youth, girls were particularly likely to use indirect aggression in response to jealousy, while boys used physical aggression more frequently than girls (Parker, Campbell, & Lucas, 2007). Other studies, using older participants, that studied jealousy within romantic relationships, have confirmed the finding that females prefer indirect aggression over males (e.g., Arnocky, Sunderani, Miler, & Vaillancourt, 2011).

Jealousy behaviors can be classified on a continuum with certain behaviors ranking as more extreme than other behaviors. For example, reacting to jealousy by behaving violently or aggressively is more extreme than discussing jealousy feelings in a calm manner with one’s friend or partner. Individuals in romantic relationships may feel more entitled than individuals in friendships to react to jealousy threats, especially sexual threats, in an extreme manner. Social norms do not promote the idea that friendships are exclusive and that engaging in other

friendships represents an act of betrayal. Thus, reactions to a perceived friendship threat are likely to be more tempered or censored.

### ***Jealousy and Negative Outcomes***

Gaining a better understanding of the emotional and cognitive processes that underlie jealousy, as well as the associated contextual factors, is important to more fully understand this phenomenon, which, at extreme levels, can lead to destructive behaviors such as stalking or violence. In one study, 15% of a community sample of adults reported experiencing physical aggression at the hands of a jealous lover (Mullen & Martin, 1994). Domestic violence victims report jealousy as a key instigator in their partner's violence (Gayford, 1975), and cross-cultural research consistently finds jealousy as the third or fourth most common motive behind non-accidental homicides (Betzig, 1989; Daly & Wilson, 1988; Felson, 1997; Harris, 2003). High levels of jealousy within a romantic relationship have emerged as a predictor of dating violence among college students (Bookwala, Frieze, Smith, & Ryan, 1992). Pathological levels of jealousy have also been linked with psychopathology, such as certain forms of obsessive-compulsive disorder or delusional disorders (Easton, Shackelford, & Schipper, 2008).

Even at non-extreme levels, jealousy can have a negative impact on individuals and relationships. Peer relationships with high levels of experienced or expressed jealousy are often marked by high levels of conflict and aggression (Brainerd, Hunter, Moore & Thompson, 2002; Parker & Wargo Aikins, 2009). The type of relationship threat affects outcomes as well. Empirical studies have consistently shown that jealousy in response to an imagined threat is associated more strongly with negative outcomes than jealousy in response to a real threat (Barelds & Dijkstra, 2007; Carson & Cupach, 2000; Dolan & Bishay, 1996; Rydell & Bringle, 2007).

The relationship in which jealousy occurs can also be an important factor in predicting outcomes. One reason that friendship jealousy is linked to maladjustment is that others tend to respond poorly when an individual goes against social norms that dictate behavior within a relationship. Specifically, friendship jealousy is detrimental to peer group functioning, as it violates the social “rule” that friendships need not be exclusive, in contrast to committed, exclusive romantic relationships. Friendship jealousy disrupts group functioning by creating tension and discouraging exploration of new social ties among members (Bukowski & Sippola, 2001).

Studies have shown that among early adolescents, self-reported friendship jealousy was associated with loneliness and dissatisfaction with peers and friends, even after individuals with one friend or no friends were excluded from analyses and when broader social acceptance and victimization were controlled for. Furthermore, being perceived by one’s peers as jealous was linked to victimization (Parker, Low, Walker, & Gammon, 2005). While limited research has explored friendship jealousy in emerging adults, attempts to prevent a friend from engaging in other friendships may be especially problematic during the transition to college. During this time, individuals are establishing new social circles and attempts to restrict this process are likely to be poorly received.

Romantic relationships are also at risk for negative consequences stemming from jealousy. Relationship expectations, such as being emotionally close or having high levels of companionship, are higher for romantic relationships than for either same-sex or cross-sex friendships. This is the case even when romantic relationships are shorter in duration than either type of friendship (Furhman, Flannagan, & Matamoros, 2009). During a jealousy incident, when an individual feels that a third party is threatening his or her relationship with a valued partner, these relationship expectations are likely unmet. Unmet expectations lead to negative feelings,

and when a romantic partner violates relationship expectations, the result is more negative than when a friend violates these expectations (Bevan, 2003; Flannagan, Marsh, & Furhman, 2005). Therefore, romantic relationships may be uniquely at risk for poor relational outcomes following a jealousy experience.

### ***Jealousy and Positive Outcomes***

Despite the fact that jealousy is often linked to maladjustment, under certain circumstances jealousy can lead to positive relationship outcomes. For example, seeing one's partner valued by others can function as a relationship intensifier, leading to increased commitment or appreciation of one's partner (Pines, 1992). Jealousy can also lead to enhanced communication between relationship partners, renewed interest in the relationship, outreach to other members of one's social network, efforts at improving oneself, or clarification or renegotiation of relationship rules (Guerrero, Andersen, Jorgensen, Spitzberg, & Eloy, 1995; Milardo & Helms-Erikson, 2000; Rusbult & Buunk, 1993).

Little research has been conducted on what defines relationships that enjoy benefits from the expression of jealousy, yet it may be that these relationships share particular characteristics. For example, these relationships may be comprised of individuals who experience relatively low levels of jealousy. Moreover, individuals may skillfully express their felt jealousy and/or partners may positively interpret these behaviors as signs of commitment and caring (Bringle & Buunk, 1986; Guerrero et al., 1995; Salovey & Rodin, 1989). Further, positive behaviors of one's partner in response to an individual's expression of jealousy, such as increased affection and commitment, may lead to positive relational outcomes (e.g., Buss, 1988). The current study aims to add to the corpus of knowledge regarding which jealousy factors are associated with both relationship maladjustment and positive outcomes.

## **Summary**

Jealousy, or an adverse reaction to a valued partner's actual or imagined participation in an alternate relationship, may be a particularly salient experience for emerging adults, as this development period emphasizes the development of numerous social ties. Jealousy is a multifaceted concept, involving emotional, cognitive, and behavioral components. Given the utmost importance of social bonds for survival and fulfilling the need for emotional closeness, jealousy may function to protect a vital relationship. However, jealousy often has paradoxical effects, documented by its association with individual maladjustment and relationship dissatisfaction.

A main distinction drawn in the jealousy literature is between experienced jealousy and expressed jealousy. Experienced jealousy refers to the emotional and cognitive components of jealousy, whereas expressed jealousy refers to the behavioral responses associated with the affective experience of jealousy. Research has shown a number of factors at multiple levels of analysis to be associated with jealousy. At the individual level, factors include self-esteem, an attribution style that places a great deal of control over the jealousy situation on one's partner, and negative prior attachment experiences.

The experience of jealousy may differ in significant ways for males and females. Gender differences have been well-established in the adult jealousy literature with regard to females being particularly sensitive to emotional infidelity and males being particularly upset by sexual infidelity. However, beyond this finding, there is little information about the sex-specific experiences of jealousy. In addition, because many aspects of the jealousy experience may vary by the type of relationship the individual is involved in (i.e., exclusive romantic relationship, non-exclusive romantic relationship, friendship), it is critical to take this contextual factor into account when developing hypotheses. Gender and relationship type may also interact in important ways.

For example, due to the special importance females place on friendships, females have been shown to experience more friendship jealousy than males. Within the context of exclusive romantic relationships, males may experience more jealousy in response to sexual jealousy threats, whereas females may experience more jealousy in response to emotional jealousy threats.

Qualities of both the partner and the jealousy target are also expected to relate to the intensity of and frequency with which an individual experiences jealousy. With regard to the jealousy target, the more the jealousy target compares favorably to the individual in terms of valued characteristics (either by the individual or partner), the more jealousy an individual feels. Previous research has not addressed questions such as whether the overlap of social networks between the jealousy target and the individual, or the jealousy target and the partner, as well as the partner's knowledge of, closeness to the jealousy target would lead to increased or decreased levels of jealousy. Within the context of romantic relationships, the romantic availability of the jealousy target may increase an individual's level of experienced jealousy. Finally, characteristics of the partner, such as commitment, openness, and trust are thought to impact the individual's feelings of jealousy. The more an individual perceives a friend or partner to be committed, open, and trusting, the less jealousy an individual would be expected to feel in a jealousy situation. Trust and transparency about the jealousy trigger may also affect an individual's level of felt jealousy. For example, learning about the events of the jealousy situation from the friend/partner rather than from other sources may help assure the individual that the jealousy threat is not compounded by questionable intentions of the part of the friend/partner.

Qualities of dyadic relationships that make up the jealousy triangle can also affect how intensity or frequently an individual feels jealousy. Finally, situational factors associated with jealousy include: how real the threat to the relationship is and the social norms regarding



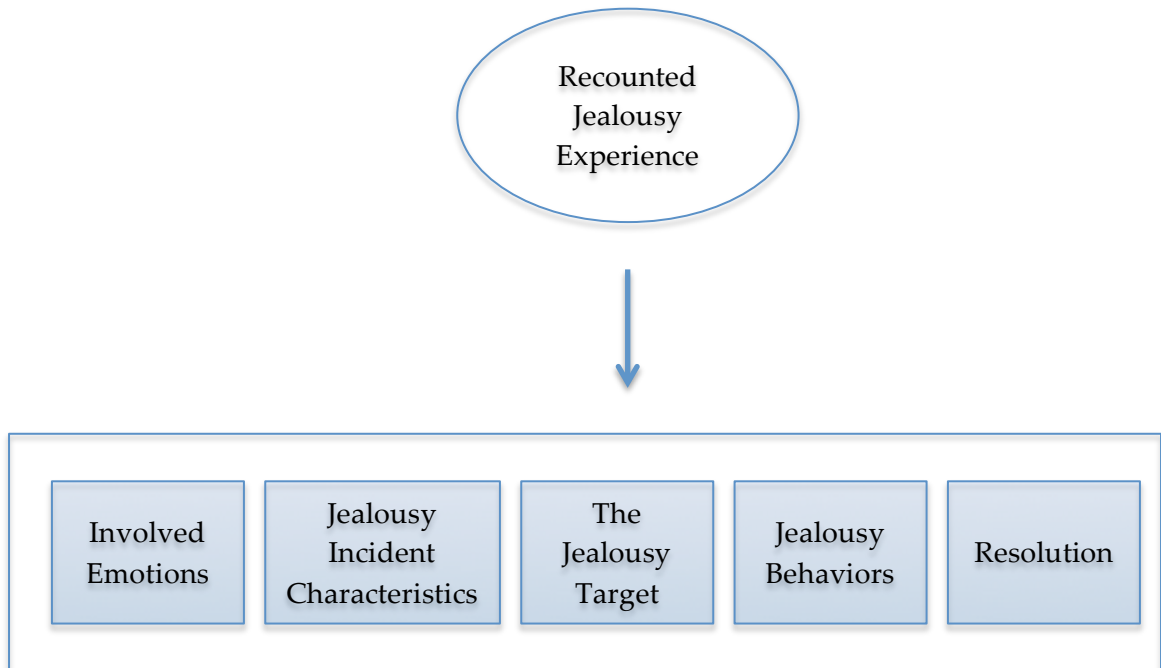
appropriateness of expressing jealousy. Certain variables may help predict the type of jealousy behavior used. For example, females may be more likely to engage in indirect jealousy expression than males. Moreover, individuals in romantic relationships may be more likely to engage in extreme jealousy behaviors than individuals in friendships.

Another imperative to study jealousy stems from the fact that the experience and expression of jealousy have been linked with maladjustment. Within the relational domain, maladjustment can include decreased levels of trust, commitment, openness and relationship dissolution. Certain factors likely put an individual at particular risk for poor outcomes following a jealousy experience, including high levels of experienced jealousy, jealousy in response to imagined threats, jealousy within romantic relationships, and jealousy behaviors that disrupt important social ties or go against social norms. In addition to the clearly established negative outcomes associated with jealousy, positive outcomes can also be experienced following a jealousy experience. For example, partners may respond to jealousy by increasing communication or commitment to one another.

### ***The Current Study***

The following models provide a visual depiction of the conceptualizations driving the current study's research questions and hypotheses.

**Figure 1: Current Study Model**



**Figure 2: Examined Components of the Recounted Jealousy Experience**

### ***Research Questions and Hypotheses***

Following the models depicted in Figure 1 and 2, this section will outline the current study's research questions and associated specific hypotheses.

#### **I. What are the features of recounted jealousy experiences among emerging adults?**

In order to provide a context for understanding jealousy among emerging adults, the first goal of the current study was to examine features of recounted jealousy experiences. Of particular interest for this study were the: 1) involved emotions, 2) jealousy incident characteristics, and 3) characteristics of the jealousy target, 4) jealousy behaviors engaged in, and 5) resolution of the incident. This examination of these features was framed by two independent variables: gender of the participant and the relationship context that the jealousy experience occurred within.

To address these issues, a newly-created jealousy questionnaire asked participants to describe, in their own words, jealousy incidents they have experienced within a friendship or a romantic relationship. This open-ended format allowed for descriptive information of the kinds of situations emerging adults find jealousy-producing. Following this open-ended description, there was a series of targeted follow-up questions. These follow-up questions documented the sequence of events within a jealousy incident and included questions asking participants to reflect on emotions and thoughts during the jealousy experience as well as to reflect on aspects of the experience from their current perspective. This newly-developed jealousy questionnaire is described in more detail in the method section.

## **II. What variables are related to jealousy intensity?**

The second goal of the study was to determine what factors influence the strength of the jealousy experience. This research question sought to understand what factors were related to jealousy intensity over the course of the relationship. Hypotheses in this section are grouped according to the type of variable being tested.

### **Individual Background Variables.**

#### ***Individual Characteristics:***

##### 1) Gender and relationship context

Females reporting a friendship jealousy incident will experience more intense jealousy than males reporting a friendship jealousy incident.

##### 2) Attachment style

Securely attached individuals will experience more intense jealousy than insecurely attached individuals.

##### 3) Past jealousy experiences

Individuals with impactful past jealousy experiences will experience more intense jealousy than individuals with less impactful past jealousy experiences.

4) Self-esteem

Individuals reporting higher self-esteem will experience less intense jealousy than individuals reporting low self-esteem.

***Jealousy Target Characteristics:***

1) Romantic availability

In romantic relationships, if the jealousy target is romantically available (“single”), the individual will experience more intense jealousy.

2) Possession of traits valued by the friend/partner

The more the jealousy target is perceived to possess traits valued by the friend/partner, the more intense jealousy the individual will experience.

**Dyadic Background Variables**

Because jealousy incidents are inherently triangular, three sets of dyadic relationships are involved: 1) the individual’s relationship with the friend/partner, 2) the individual’s relationship with the third party (“jealousy target”), and 3) the friend/partner’s relationship with the jealousy target. Hypotheses regarding each of these dyadic relationships are discussed below.

***Individual and Friend/Partner Dyadic Relationship.***

1) Type of valued relationship

Individuals will experience more intense jealousy in both exclusive and non-exclusive romantic relationships than in friendships.

Higher levels of the following variables are expected to be associated with **more** intense jealousy:

*The individual's:*

- a) closeness to friend/partner
- b) commitment to friend/partner
- c) satisfaction with the relationship

Higher levels of the following variables are expected to be associated with **less** intense jealousy:

*The individual's:*

- a) level of trust in the friend/partner

*The partner's:*

- a) level of commitment to the individual
- b) openness/transparency

To date, no research has examined how the relationship between an individual and the jealousy target might influence an individual's level of jealousy intensity.

To address this, an exploratory analysis will examine:

- 1) Whether the individual's social circle overlap with the jealousy target will relate to the individual's level of jealousy intensity.

#### ***Friend/Partner and Jealousy Target Dyadic Relationship.***

Higher levels of the following variables are hypothesized to be associated with **more** intense jealousy:

- a) the length of the relationship between the friend/partner and the jealousy target
- b) social circle overlap of the jealousy target and the friend/partner

#### **Incident Variables.**

The following hypotheses regarding incident variables will be tested in the current study.

1) Reasonableness of the jealousy threat

Jealousy threats that have a somewhat or very clear basis for jealousy (as rated by an outside observer) will be associated with more intense jealousy than jealousy threats that have no clear basis for jealousy.

1) How the individual learned about the jealousy incident

Individuals who learned about the jealousy incident through their partner's disclosure will experience less intense jealousy than individuals who learned about the jealousy incident through other channels.

### **III. What individual background variables are related to jealousy frequency?**

The final goal of the study is to investigate what factors may make an individual vulnerable to jealousy. Vulnerability to jealousy is operationalized as experiencing frequent jealousy over the course of the friendship/relationship. This question was addressed in two ways. First, a number of individual background variables were tested to see if there was an association with jealousy frequency. Second, participants reporting no jealousy experience were compared to participants who did report a jealousy experience. Below are the hypotheses regarding individual background variables and their relation to jealousy frequency.

#### **Individual Background Variables.**

##### ***Individual Characteristics:***

1) Gender and relationship context

Females reporting a friendship jealousy incident will experience more frequent jealousy than males reporting a friendship jealousy incident.

2) Attachment style

Insecurely attached individuals will experience more frequent jealousy than securely attached individuals.

3) Past jealousy experiences

Individuals with impactful past jealousy experiences will experience more frequent jealousy than individuals with less impactful past jealousy experiences.

4) Self-esteem

Individuals reporting higher self-esteem will experience less frequent jealousy than individuals reporting lower self-esteem.

## Method

### *Participants*

A total of 227 college students in a southeastern United States private university participated in the study. An interest in gender differences and a recognition that social experiences that may relate to jealousy (e.g.- transition from high school, going abroad, upcoming graduation) vary across year in college prompted the recruitment of approximately equal numbers of males (N=104) and females (N=123) as well as upperclassmen (N=113) and underclassmen (N=114). Participants were recruited from three sources: the Duke Department of Psychology and Neuroscience subject pool, the subject pool of the Duke Interdisciplinary Initiative in Social Psychology (DIISP) lab through Duke's Social Science Research Institute, and via flyers posted across Duke University campus. Students received department credit or were paid \$12 as compensation. Data collection occurred during the spring and summer of 2012.

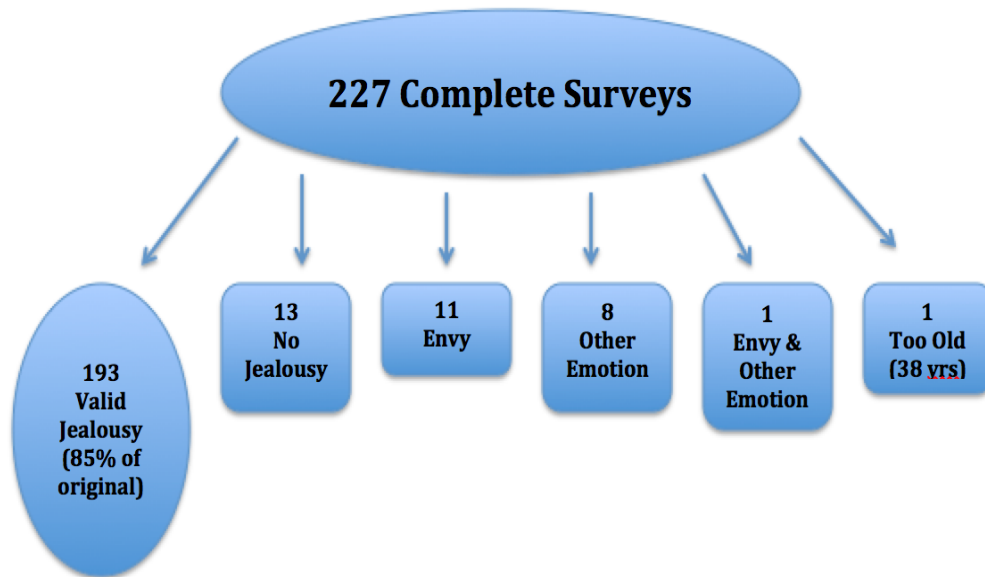
### **Selection Criteria**

Given the study's focus on jealousy experiences during the developmental period of emerging adulthood, and specifically encompassing the transitions brought about by college, only undergraduate students aged 17-25 reporting a valid jealousy experience (i.e., not an experience of a different emotion) were considered to have met the study criteria. An examination of questionnaire responses revealed that a number of responses did not meet these criteria (see Figure 3).

A total of 34 participants were excluded from the main analyses. Of these, 13 participants reported no jealousy experience, 11 reported an envy experience (despite instructions defining jealousy as "*a negative reaction to your partner/friend's **interest in, or relationship with, another person.** Jealousy does **NOT** include being envious, or wanting what another*



person has.”), 8 reported a different emotional experience (e.g.- “I really disliked my friend’s boyfriend”), 1 reported an envy and different emotional experience in a single response, and 1 undergraduate participant was excluded because he was 38 years old.



**Figure 3: Final Study Sample with Exclusions**

### **Final Study Sample**

A total of 193 participants comprised the final study sample (85% of the original completed surveys). Participants included 94 (49%) males and 99 (51%) females who ranged in age from 17 to 25 years old ( $M = 20.0$  years old,  $SD = 1.44$ ). The sample included 101 underclassmen (59 Freshman, 42 Sophomores) and 92 upperclassmen (29 Juniors, and 63 Seniors). In terms of ethnicity, participants identified as: European American (53%), Asian American (20%), African American (14%), Hispanic (5%), or Multiethnic or Other (8%). Scores on the Hollingshead (1975) index of socioeconomic status (SES), based on parental education and

occupation, ranged from 21 to 66 ( $M=51.00$ ,  $SD=11.07$ ). Participants were overwhelmingly heterosexual ( $N=186$ , 96%). Eighty-two participants (42%) reported current involvement in an exclusive romantic relationship. In terms of past romantic involvement, lifetime number of romantic relationships ranged between 0-6 partners ( $M=2.1$ ,  $SD= 1.33$ ). Age of first romantic relationship ranged from 12 to 22 years ( $M=16.0$  years old,  $SD=1.69$ ).

## ***Measures and Descriptions***

### **Order of Measures**

Table 2 presents the full list of measures in the order that were administered in the study (see Appendix A for full measures). Special attention was paid to determining the ordering of these measures to ensure the most accurate and unbiased collection of data. The final measure asked participants to describe a positive peer experience so as to counter any potential negative mood induction from previous portions of the study. Ordering also took into account factors such as fatigue. The Jealousy Experiences Questionnaire, which contained the majority of the study variables, was relatively long. By positioning this measure towards the beginning of the study, the likelihood that participants would complete this measure without being influenced by the other measures and without becoming fatigued was maximized.

**Table 2: Study Measures**

<b>Measure</b>	<b>Authors</b>
1. Demographic Questionnaire	Created for this study
2. Relationship Convoys (current)	Kahn & Antonucci, 1980
3. Relationship Convoys (future)	Kahn & Antonucci, 1980
4. Adult Attachment Questionnaire	Hazan & Shaver, 1990 <sup>1</sup>
5. Rosenberg Self-Esteem Scale	Rosenberg, 1965 <sup>2</sup>
6. Jealousy Experiences Questionnaire	Created for this study
7. Positive Peer Experiences Questionnaire	Created for this study

Each individual measure will now be discussed in detail. The core feature of this study is the descriptive nature of the Jealousy Experiences Questionnaire. For this reason, it is described first. The other measures are presented in the order in which they were administered.

### **The Jealousy Experiences Questionnaire (Created For This Study)**

This newly developed questionnaire comprised the crux of this dissertation study, assessing components spanning all levels of the conceptual model (see Figures 1 and 2). The content of this questionnaire included variables culled from previous research on jealousy and its associated factors as well as variables hypothesized to be associated with jealousy, but that have yet to be empirically tested. The construction of this questionnaire was aided by: 1) focus group testing with Duke undergraduates, 2) cognitive interviewing (e.g., Beatty & Willis, 2007) with three undergraduates, involving the researcher systematically reviewing the content of the survey on an individual basis in order to increase the clarity and reduce misinterpretation of the survey

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<sup>1</sup> The Mother-Father-Peer Scale (Epstein, 1983) was also administered to provide a non-contemporaneous measure of attachment. However, scores on subscales of this measure were not correlated with the Adult Attachment Measure or relevant study variables, so the Mother-Father-Peer Scale was not used in the final analyses.

<sup>2</sup> The Self-Perception Profile for Adolescents (Harter, 1988) was also administered in order to investigate whether specific components of self-esteem were related to jealousy. Initial analyses revealed that no subscales of the Self-Perception Profile for Adolescents were related to relevant study variables, so this measure was not analyzed further. Instead, self-esteem was measured using the Rosenberg Self-Esteem Scale.

questions, and 3) pilot data from a sample of 20 Duke undergraduates completing a preliminary version of this questionnaire. Pilot data results were used to refine questionnaire items and establish construct validation. Pilot study results are discussed in more detail at the end of the description of the Jealousy Experiences Questionnaire.

This open-ended questionnaire was developed to obtain full descriptions of actual jealousy experiences from the participants' perspectives rather than rely on hypothetical vignettes. Participants were instructed to:

“Think of a time while you've been at Duke that you were jealous in a close relationship. This could be a romantic relationship, a same-sex friendship, or a cross-sex friendship. By jealousy, we mean a negative reaction to your partner/friend's **interest in, or relationship with, another person**. Jealousy does **NOT** include being envious, or wanting what another person has. Remember, this experience needs to have occurred during college. Please briefly describe this jealousy experience in the space below.”

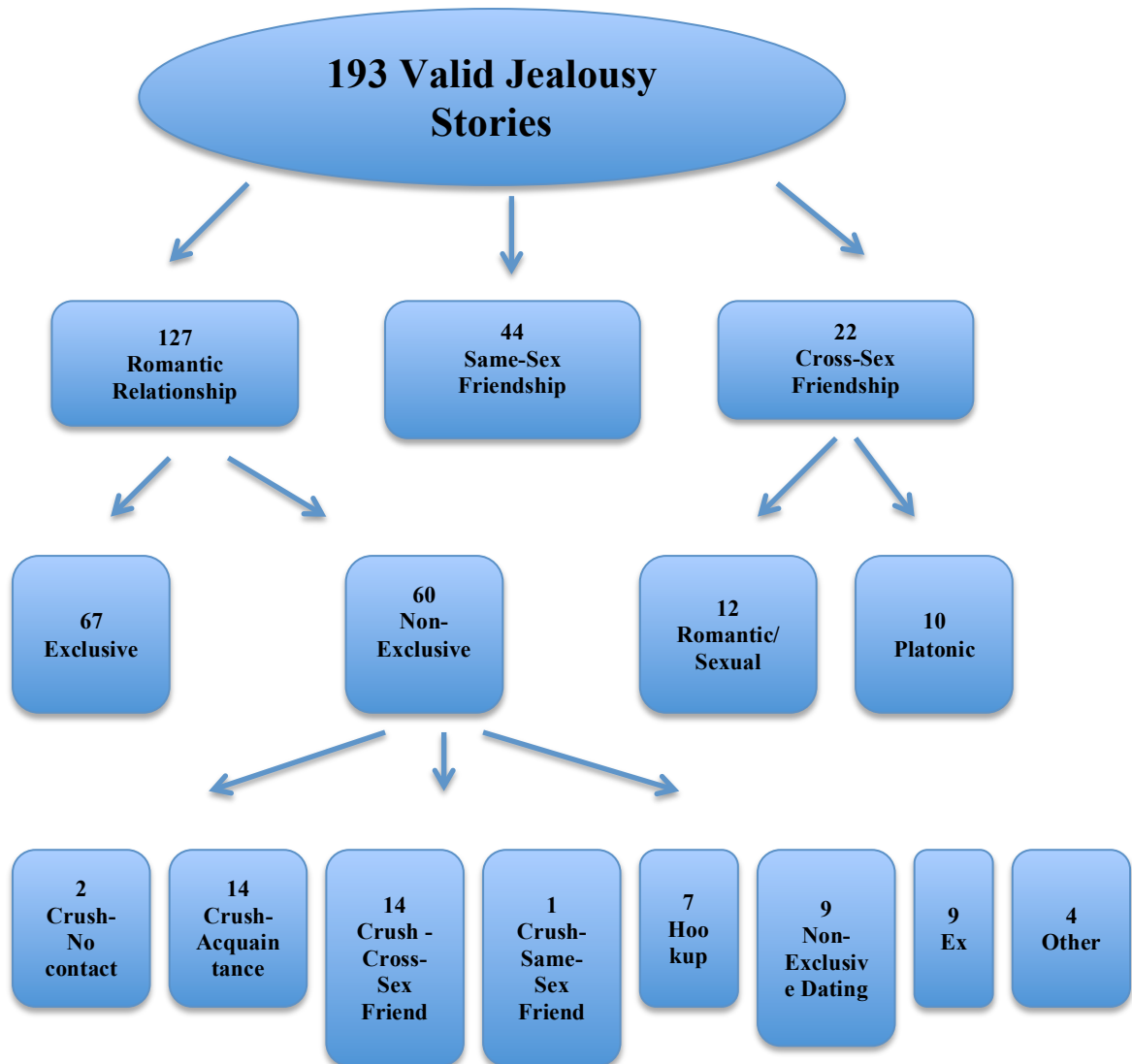
Participants were requested to report on jealousy experiences during college to ensure that these experiences occurred during the developmental period of interest, as well as to limit retrospective recall bias. Jealousy incidents were restricted to experiences within friendships and romantic relationships because these were the types of peer relationships of theoretical interest. Depending on whether the participant described a friendship or romantic relationship jealousy experience, an associated set of follow-up questions were presented. Some follow-up questions were the same across relationship type, and some questions were unique to romantic relationships. While the follow-up questions targeted specific variables involved in study hypotheses, participants were first asked to describe the jealousy experience in their own words. This technique was employed to help participants clearly remember the reported jealousy experience and to realistically evoke the affective experience of jealousy. In addition, content of this reported jealousy experience was later coded.

Participants were prompted to describe two separate jealousy experiences, one involving a friendship (either a same-sex or cross-sex friendship) and one involving a romantic relationship. Because only a minority of individuals reported two jealousy experiences and because the first reported experience is thought to be the most salient and impactful, only first reported jealousy experiences were analyzed.

### **Relationship Context Categorization**

Of primary interest in the current study was how relationship context was associated with jealousy characteristics. After answering the open-ended recounted jealousy experience question, participants were asked to classify the relationship described in their recounted jealousy experience as a romantic relationship, same-sex friendship, or cross-sex friendship.

These were the three relationships of theoretical interest that were thought to represent mutually exclusive categories. However, an examination of responses revealed that these relationships often had overlapping features. Specifically, 1) cross-sex friendships were either described as platonic or had romantic/sexual overtones, and 2) romantic relationships were either exclusive or non-exclusive in nature. Non-exclusive relationships included crushes (with and without contact with the desired other), hookups, non-exclusive dating, and ex-partners (see Figure 4). These findings are in line with previous research documenting that cross-sex friendships can often include romantic and sexual components (e.g., Afifi & Faulkner, 2000) and a burgeoning literature illustrating the heterogeneity of romantic relationships (e.g., Furman & Collins, 2008).

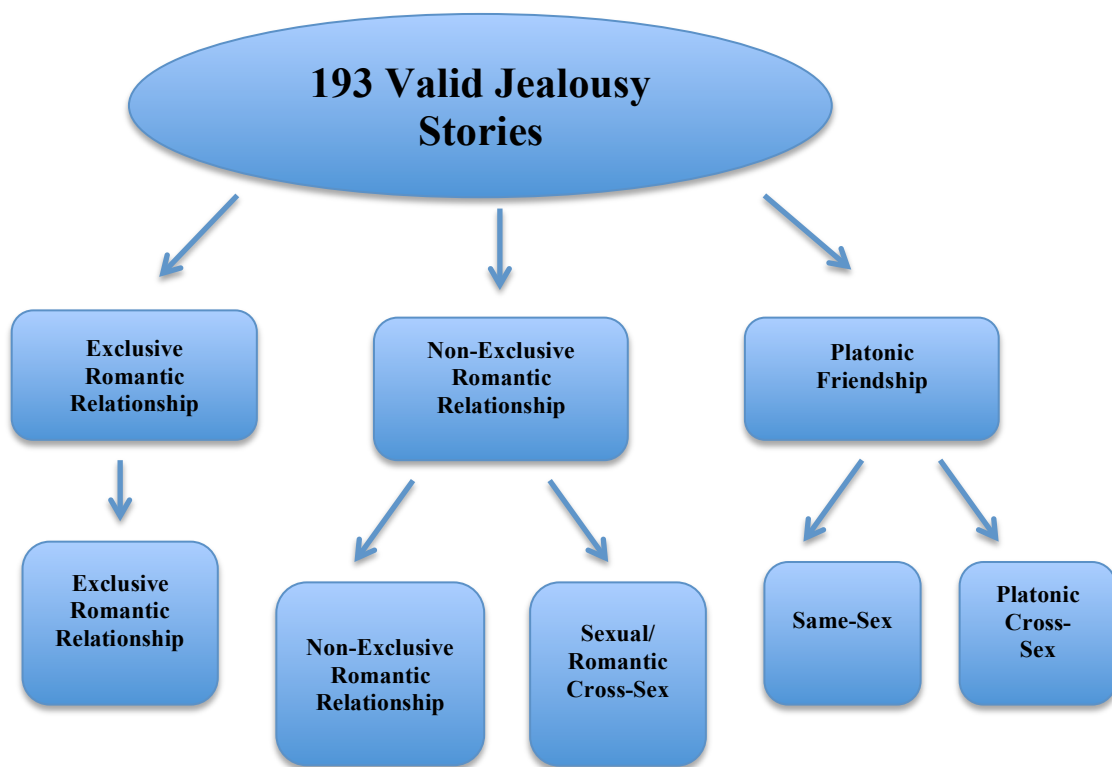


\* No statistically significant gender differences among non-exclusive romantic relationship categories or cross-sex friendship categories

**Figure 4: Relationship Context Categories with Elaborated Descriptions**

After further reflection, a new categorization was developed to classify relationships described in the recounted jealousy experience. Whether the relationship was romantic/sexual or platonic was the primary feature upon which classification hinged. If the relationship was

romantic or sexual in nature, the relationship was further divided into exclusive or non-exclusive categories. This categorization resulted in three independent relationship groupings: exclusive romantic relationships, non-exclusive romantic relationships, or platonic friendships. See Figure 5 to see how the original categories of relationships were regrouped into the current categorization.



**Figure 5: Recategorized Relationship Classification**

### **Follow-up Questions**

Following a written description of the recounted jealousy experience, participants were asked a series of follow-up questions. Follow-up questions were organized around five main categories: involved emotions, incident characteristics, jealousy target, jealousy behaviors, and

resolution (see Figure 2).<sup>3</sup> See Appendix B for the coding system used to code selected responses.

### *Involved Emotions*

The emotions involved in jealousy were examined in two ways. First, in an effort to understand jealousy and its related emotions, participants were asked to rate how much they felt the following emotions at the time of the jealousy experience: jealousy, anger, sadness, fear, and embarrassment. In addition, participants were also asked to characterize how frequent their feelings of jealousy were over the course of their friendship/relationship. For all these questions, a five-point Likert scale was used (1= “not at all”, 5= “a lot”).

Second, the emotional content of the recounted jealousy experience was analyzed. The Linguistic Inquiry and Word Count, or LIWC, is a text analysis program that analyzes written text on a word-by-word basis to calculate the percentage words in a text sample that match each of up to 82 language dimensions (for a review of development and validity of the LIWC, see Tausczik & Pennebaker, 2010). In the current study, the percentage of total affect words (category with 915 potential words), positive words (406 potential words), negative words (499 potential words), anxiety (91 potential words), anger (184 potential words), and sadness words (101 potential words) were calculated.

These categories were arranged hierarchically. Total affect (e.g., “happy”, “cried”, “abandon”) was a count of both positive (e.g., “love”, “nice”, “sweet”) and negative (e.g., “hurt, ugly, nasty) emotion words. Anxiety (e.g., “worried”, “fearful”, “nervous”), anger (e.g., “hate”, “kill”, “annoyed”) and sadness (e.g., “crying”, “grief”, “sad”) word counts comprised each negative emotion category. Alpha coefficients ranged from .89 to .97.

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<sup>3</sup> Additional follow-up questions about other aspects of the jealousy experience and the players involved in the jealousy triangle were asked. However, the current study focuses on the five main categories mentioned previously. Only results pertinent to these categories will be presented.



### *Incident Characteristics*

To order to gain a more nuanced understanding of the jealousy incident, a coding scheme was developed to analyze aspects of the recounted jealousy experience provided by participants (see Appendix for a description of the complete coding system). An interrater reliability analysis for each of the coding categories was performed to determine consistency among raters. Once satisfactory interrater reliability was achieved on practice content ( $K=.70$  or higher for each coding category), coders independently coded participants recounted jealousy experience. Approximately 15% of the responses were used for a reliability check. Individual Cohen kappa statistics were used to determine consistency among coders. Three elements were coded from the recounted jealousy experience. The first story element coded was the *reason for the jealousy* (unweighted  $K=.80$ ). Corresponding to theoretical underpinnings of jealousy, this variable included possible codes of possessiveness, worry about relationship diminishment, mourning relationship loss, and other. The second story element examined was the *reasonableness of the threat*, as rated by objective outsiders (weighted  $K=.92$ ). In order to ascertain how serious the jealousy threat prompting the jealousy incident was, a three-point scale was used: no articulated threat, little/some cause for concern, and a clear violation. Finally, to test whether gender differences found in previous literature (males feel more jealousy in the face of a sexual threat than females) emerged in the current sample, the reported jealousy experience was coded for *presence or absence of a sexual threat* (unweighted  $K=1.0$ ). To address this question in an additional way, the LIWC program was used to determine the percentage of total words in the reported jealousy experience that were sexual in nature, using a dictionary of 96 possible words with sexual connotations (e.g., cheat, horny, sex).

### *Jealousy Target*

Very little is known about the role or characteristics of the jealousy target in the phenomenon of jealousy. Therefore, a significant contribution of the current study is to provide information regarding the characteristics of the jealousy target and to explore the relationships the jealousy target had with both the individual and the friend/partner. First, the reported jealousy experience was coded to determine if the *jealousy target was a single person or a group of people* (unweighted K=1.0). Next, a number of questions addressed the relationship between the individual and the jealousy target, including 1) how well the individual knew the jealousy target, 2) how important the individual considered the relationship with the jealousy target, 3) how long the individual knew the jealousy target, and 4) the degree of overlap between the individual and the jealousy target's social circles. Similar questions were asked about the relationship between the friend/partner and the jealousy target. In addition, the individual was asked whether the friend/partner and the jealousy target shared a unique bond (e.g., shared past or current experiences, cultural background, or personality traits) that was not similarly shared between the individual and the jealousy target.

### *Jealousy Behaviors*

Beyond understanding the internal experience of jealousy, it is important to know what, if any, actions were taken. Thus, the next series of questions addressed jealousy behaviors. The participants were asked to indicate all jealousy behaviors they engaged in from a list of behaviors culled from the previous literature. Following this, the participants were asked to report which single behavior was their most characteristic response to jealousy. In an effort to understand whether jealousy is the kind of experience that is discussed with another person, the participants were asked if they confided in others (besides the friend/partner) regarding this experience and who was confided in. To allow participants to use their own words to describe the *reasons that*

*they did or did not confide in others*, participants provided an open-ended response to this question, which was later coded (unweighted K=.82). The individual's communication with the friend/partner about the jealousy experience was also deemed an important component of understanding the jealousy behaviors of the individual. Thus, participants were asked if their friend/partner knew about the jealousy incident. A coding scheme assessed *how the friend/partner knew about the jealousy incident* (unweighted K= .78), including through what channels the friend/partner learned about the jealousy incident or *why this information was not disclosed* (unweighted K= 1.0), which detailed the possible reasons individuals gave for not sharing this information with the friend/partner.

<i>Resolution</i>
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The final series of follow-up questions focused on understanding the outcomes of the reported jealousy experience. The first set of questions addressed the impact of the jealousy experience on the friendship/relationship. Participants were asked about post-incident changes in 1) the overall feeling about the friendship/relationship, 2) commitment to friend/partner, 3) trust in friend/partner, 4) satisfaction with the friendship/relationship. Participants were asked if they were still in the friendship/relationship described in the jealousy experience, and, if not, how much jealousy contributed to the end of this relationship. In order to capture potential positive outcomes of the jealousy experience, participants indicated whether any positive outcomes occurred and what they were, choosing from a list of possible positive outcomes. Participants also answered whether anything like the jealousy experience described happened again in the course of the friendship/relationship. Finally, participants were asked to reflect about whether they would handle the incident the same way if it happened again and *what lessons were learned*. The lessons learned question was coded to indicate whether participants felt that they learned something about themselves, about others, or neither (unweighted K=.76).

## Study Variables

A large number of variables from the Jealousy Experiences Questionnaire were used to test the study's research hypotheses. Table 3 provides a summary of these variables. This table includes the variable name, the operationalization, and the possible scores obtained. Jealousy experience variables used in all study questions are presented. Variables are grouped according to conceptual category (see Figures 1 and 2). Asterisks indicate variables coded from participant's open-ended responses.

**Table 3: Jealousy Experience Questionnaire Variables**

<b>Variable</b>	<b>Operationalization</b>	<b>Score</b>
<b><i>Reported Jealousy Experience Variables</i></b>		
<b>Independent Variables</b>		
Gender	"What is your sex?"	Male/Female
*Relationship Context	"The type of relationship described [in your recounted jealousy experience] can best be described as:"	1) Romantic relationship 2) Same-sex friendship 3) Cross-sex friendship  Recoded into: 1) Exclusive romantic relationship 2) Non-exclusive romantic relationship 3) Platonic friendship
<b>Involved Emotions</b>		
Jealousy Intensity	"During the jealousy incident, how intense were your feelings of jealousy?"	1-5 1: Very mild 5: Very intense
Anger	"At the time of the jealousy incident, how much anger did you feel?"	1-5 1: None 5: A lot
Sadness	"At the time of the jealousy incident, how much sadness did you feel?"	1-5 1: None

		5: A lot
Fear	“At the time of the jealousy incident, how much fear did you feel?”	1-5 1: None 5: A lot
Embarrassment	“At the time of the jealousy incident, how much embarrassment did you feel?”	1-5 1: None 5: A lot
Jealousy Frequency	“Overall, how frequently did you feel jealousy in this relationship?”	1-5: 1: Never 5: Very often
Overall Jealousy Intensity	“Overall, how intensely did you feel jealousy in this relationship?”	1-5: 1: Never 5: Very intensely
*Total affect	% of affect words in total reported jealousy experience	0-100%
*Positive emotion	% of positive emotions words in total reported jealousy experience	0-100%
*Negative emotion	% of negative emotion words in total reported jealousy experience	0-100%
*Anxiety	% of anxiety words in total reported jealousy experience	0-100%
*Anger	% of anger words in total reported jealousy experience	0-100%
<b>Jealousy Incident</b>		
*Reason for jealousy	Root cause of jealousy	4 categories: Possessiveness, worry about relationship diminishment, mourning relationship loss, other  Later collapsed into two categories: possessiveness vs. worry about relationship diminishment
*Reasonableness of threat	The continuum between real/potentially real jealousy threats vs. jealousy threats with no basis in reality	1: No articulated threat 2: Little/some cause for concern

		3: Clear violation
*Sexual threat	Jealousy threat is considered sexual in nature	Yes/no
*Sexual content	% of sexual words in total reported jealousy experience	0-100%
<b>Jealousy Target</b>		
*Who is the jealousy target	One person or a group	One vs. many
<i>Individual and jealousy target relationship</i>		
Individual know jealousy target	“At the time of the jealousy incident, how well did you know the jealousy target?”	1-5 1: Not at all 5: Very well
Relationship with jealousy target important	“Did you include the jealousy target in the concentric circle representation of current important relationships completed in the beginning of the study?”  “If yes, what circle did the jealousy target fall into?”	Yes/No  Closest, second closest, third closest
How long know jealousy target	“At the time of the jealousy incident, how long had you known the jealousy target?”	Years, months  Recoded into 3 months or less vs. more than 3 months
Social circle overlap	“At the time of the jealousy incident, how much overlap was there in your social circle and the social circle of the jealousy target?”	1:5 (pictorials for each option) 1: Completely separate 5: Very embedded
<i>Friend/Partner and jealousy target relationship</i>		
Friend/Partner know jealousy target	“At the time of the jealousy incident, how well did your friend/partner know the jealousy target?”	1-5 1: Not at all 5: Very well
How long friend/partner know jealousy target	“At the time of the jealousy incident, how long had your friend/partner known the jealousy target?”	Years, months  Recoded into 3 months or less vs. more than 3 months
Social circle overlap	“At the time of the jealousy incident, how much overlap was there in your	1:5 (pictorials for each option)

	friend/partner's social circle and the social circle of the jealousy target?	1: Completely separate 5: Very embedded
Share something unique with jealousy target	<p>“At the time of the jealousy incident, did your friend/partner share something with the jealousy target that you did not also share with him/her?”</p> <p>If so, what did they share? (check all that apply)</p>	<p>Yes/No</p> <p>Past experiences, current experiences, cultural background, personality traits, other</p>
<b>Jealousy Behaviors</b>		
<i>The Individual</i>		
Jealousy behaviors	<p>“Please check all behaviors that apply.”</p> <p>“Now, please indicate the single behavior that is most characteristic of your response to jealousy.”</p>	<p>1. Calmly talked with friend/partner about my feelings</p> <p>2. Verbally confronted my friend/partner in an aggressive way</p> <p>3. Physically threatened or harmed my friend/partner</p> <p>4. Showed my negative feelings through body language</p> <p>5. Tried to “get back at my friend/partner by making him or her feel guilty or jealous</p> <p>6. Spied, snooped, or kept tabs on my friend/partner</p>

		<p>7. Avoided/decreased communication</p> <p>8. Threatened to end the relationships</p> <p>9. Ended the relationship</p> <p>10. Increased affection towards my friend/partner</p> <p>11. Calmly talked to jealousy target about my feelings</p> <p>12. Aggressively confronted the jealousy target</p> <p>13. Spied, snooped, or kept tabs on the jealousy target</p> <p>14. Other (specify)</p> <p>15. None</p>
Confide in others	“At the time of the jealousy incident, did you confide in anyone other than your friend/partner about the incident?”	Yes/No
Confide in who	“Please indicate how many people in each category you confided in”	<p>Family</p> <p>Same-sex friend</p> <p>Cross-sex friend</p> <p>Acquaintance</p> <p>Coworker</p> <p>Other</p>
<i>The Friend/Partner</i>		
Did friend/partner know individual was jealous		Yes/No
*How did friend/partner know		<p>1. Told</p> <p>2. Friend/partner figured out</p> <p>3. Someone else told</p>



		friend/partner 4. Don't know/unclear
*If didn't know, why not		1. Inappropriate 2. Negative impact 3. Own issue/didn't want to hurt friend/partner 4. Deliberately hid 5. Not a big deal 6. Didn't tell/other
<b>Resolution</b>		
Overall feeling about relationship	"After the jealousy incident, how would you characterize how you felt about the relationship with your friend/partner?"	1-5 1: Much more negative 5: Much more positive
Commitment	"After the jealousy incident, was there any change in your level of commitment to your friend/partner?"	1-5 1: Much less committed 5: Much more committed
Trust	"After the jealousy incident, was there any change in your level of trust in your friend/partner?"	1-5 1: Much less trust 5: Much more trust
Satisfaction with relationship	"After the jealousy incident, was there any change in your level of satisfaction with your relationship with your friend/partner?"	1-5 1: Not at all 5: Completely
Still in friendship/relationship	"Are you still in the friendship/relationship described in the jealousy incident?"	Yes/No
Jealousy contribution to end	"If not, how much did jealousy contribute to the ending of the friendship/relationship?"	1-5 1: Not at all 5: A great deal
Positive outcomes	"Did you experience any positive outcomes following the jealousy incident?"  "Please indicate all positive outcomes that you experienced."	Yes/No  1. Enhanced communication 2. Reached out to others

		3. Improved self 4. Increased affection towards friend/partner 5. Renegotiated relationship rules 6. Other
Happen again	“Following the jealousy incident, did anything like this happen again in your friendship/relationship?”	Yes/No
Handle	“If something like this happened again, would you handle it the same way?”	Yes/No
*Lessons learned	“What did you take away from this experience, what were the lessons learned?”	Internal/External
<b><i>Intensity/Frequency Variables</i></b>		
<i>Individual characteristics</i>		
Past jealousy experiences	“How much do you think your past jealousy experiences have impacted how you approach current or future relationships or close friendships?”	1-5 1: None 5: Very much
Jealousy target romantic availability	Is jealousy target is in an exclusive romantic relationship?	Yes/No
Possession of traits valued by friend/partner	“What traits did your partner value most in a romantic partner? For each trait endorsed, please indicate whether you thought, at the time, that you or the jealousy target possessed more of this trait.”	1. You 2. Equally you and the jealousy target 3. The jealousy target
<i>Dyadic background characteristics: Individual and Friend/Partner</i>		
Closeness	“At the time of the jealousy incident, how emotionally close did you feel to your partner?”	1-5 1: Not at all 2: Very
Commitment	“At the time of the jealousy incident, how committed were you to your partner?”	1-5 1: Not at all 5: Completely

Trust	“At the time of the jealousy incident, how much did you trust your partner?”	1-5 1: Not at all 2: Extremely
Satisfaction	“At the time of the jealousy incident, how satisfied were you with the relationship with your friend/partner?”	1-5 1: Not at all 2: Completely
Friend/partner’s commitment	“At the time of the jealousy incident, how committed was your friend/partner to you?”	1-5 1: Not at all 2: Completely
Friend/partner’s openness/transparency	“At the time of the jealousy incident, how much did your friend/partner tell you about the activities he/she participated in and the people he/she interacted with while apart from you?”	1-5 1: Not very much 2: Everything
<i>Individual and jealousy target</i>		
Social circle overlap	“At the time of the jealousy incident, how much overlap was there in your social circle and the social circle of the jealousy target?”	1:5 (pictorials for each option) 1: Completely separate 5: Very embedded
<i>Jealousy target and friend/partner</i>		
* Length of relationship	“At the time of the jealousy incident, how long had your friend/partner known the jealousy target?”	Years, months  Coded into: 1. Less than 3 months 2. 3 months or more
Social circle overlap	“At the time of the jealousy incident, how much overlap was there in the social circle of your friend/partner and the social circle of the jealousy target?”	1:5 (pictorials for each option) 1: Completely separate 5: Very embedded
<i>Incident variables</i>		
*Reasonableness of threat	The continuum between real/potentially real jealousy threats vs. jealousy threats with no basis in reality	1: No articulated threat 2: Little/some cause for concern 3: Clear violation

How individual learned about jealousy incident	“How did you become aware of the jealousy incident you described? “	<ol style="list-style-type: none"> <li>1. It happened while I was present</li> <li>2. My friend/partner told me about it, unprompted</li> <li>3. My friend/partner told me about it after I asked</li> <li>4. I heard about it through a friend</li> <li>5. I heard about it through an acquaintance</li> <li>6. I discovered it accidentally</li> <li>7. I discovered it after checking up on my friend/partner</li> <li>8. Other (specify)</li> </ol>
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### **Demographic Questionnaire (Created For This Study)**

Participants completed a demographic questionnaire prior to completion of any other study measures. Created for this study, the Demographic Questionnaire is a 14-item form which collects the following variables: sex, age, year in college, ethnicity, religiosity, socioeconomic status (calculated from parental education and occupation); (Hollingshead, 1975), parent’s marital status, sexual orientation, academic adjustment (comprised of GPA and plans for future post-graduate education), and past and current romantic relationship status (age of first exclusive

romantic relationship, number of past exclusive romantic relationships, and current romantic relationship status).

### **Relationship Convoys- Current and Future (Kahn & Antonucci, 1980)**

This measure provided an assessment of the importance the participant placed on members of his or her social circle. For the current study, this measure was used to determine how important the individual considered the jealousy target.

Kahn and Antonucci (1980) use the concept of a “convoy” to visually represent a structure within which social support is given and received. Participants were presented with a series of four concentric circles of increasing size superimposed on one another. The smallest and innermost circle represented the participant. The three larger concentric circles represented that person’s convoy. Participants were instructed to write the initials of people who are important to them/whom they receive social support from and also to identify their relationship to these people (ex- “same-sex friend”, “brother”, etc). The closer the participant felt to an individual, the closer this person was from the participant on the concentric circles making up the convoy.

### **Adult Attachment Questionnaire (Hazan & Shaver, 1990)**

The Adult Attachment Questionnaire was chosen as a measure of relationship history for the current study because it links adult behavior to experiences earlier in life by classifying young adults’ present patterns of behavior in close relationships into one of three attachment style categories: secure, avoidant, or anxious-resistant. To assign participants into these groups, the measure presented three short descriptions of different attachment styles and asked participants to choose one style that best represents them. Next, participants indicated how well or poorly each description characterized the way they thought, felt, and behaved in close relationships on a 7-

point Likert scale, ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). Based on the description that participants reported was most characteristic of themselves, participants were categorized into one of three groups: secure attachment, anxious attachment, or ambivalent attachment. Hazan and Shaver updated their original scale (1987) in 1990 to provide a clearer differentiation between attachment styles and to remove the emphasis on romantic relationships, and this updated version is used in the current study. Cronbach's alphas for the three attachment categories range from .70-.76 (Simpson et. al., 1996).

### **Rosenberg Self-Esteem Questionnaire (Rosenberg, 1965)**

Self-esteem is one of the most widely cited individual-level variables associated with jealousy (e.g., DeSteno, Valdesolo, & Bartlett, 2006; Parker & Gamm, 2003). To assess this construct, participants were given one of the most often used measures of self-esteem in psychological research: the Rosenberg Self-Esteem Questionnaire, a 10-item unidimensional scale designed to measure self-reported self-esteem. Each of the 10 items is rated on a 4-point scale ranging from 1 = *strongly agree* to 4 = *strongly disagree*. A self-esteem score is calculated after reversing the positively worded items (1,3,4,7,10). Scores range from 10-40, with higher scores indicating higher self-esteem. The internal consistency coefficient for this study was .90.

### **Positive Peer Experience Questionnaire (Created For This Study)**

The Positive Peer Experience Questionnaire was the last measure of the study, ordered in this way to offset any negative emotions that may have been elicited by the preceding measures that assess negative affect. The Positive Peer Experience Questionnaire provided a comparison to the negative peer experiences assessed through the open-ended jealousy experiences descriptions in the Jealousy Experiences Questionnaire. Similar in format to the open-ended jealousy experiences descriptions, this two-item questionnaire asked participants, "*Briefly describe a*

*positive experience you have had while at Duke with either a same-sex friend, a cross-sex friend, or a romantic partner.*” In order to ascertain why the participant considered this a positive event, the second item asks this question directly.

## **Procedures**

This study was listed on the Psychology and Neuroscience Department subject pool and the DIISP lab subject pool websites. The survey was presented to participants in an online format using the program Qualtrics. All participants viewed and completed the questions in the same order, with the exception of the Jealousy Experience Questionnaire. This ordering of friendship or romantic relationship jealousy questions depended on which jealousy experience the participant described first. Questions were ordered in one of two ways: 1) friendship jealousy follow-up questions and then romantic relationship jealousy questions or 2) romantic relationship jealousy follow-up questions and then friendship jealousy questions. If the participant only described one jealousy experience, only the appropriate follow-up questions were administered. The entire study took one hour or less to complete. At the end of the study, participants were thanked and provided an informational sheet that outlined the purposes of the study and provided the researcher’s contact information in case of questions or concerns (see Appendix). Participants were also given contact information for local mental health resources (Duke Psychology Clinic and Duke REACH) in the event that any of the questions in the study caused distress (see Appendix A).

## **Data Analytic Plan**

### **Preliminary Analyses and Descriptives**

Prior to the examination of any study hypotheses, descriptive statistics were run on each of the independent and dependent variables. This information was analyzed to determine if the

distributions of scores met necessary assumptions and was consistent with expectations set by prior research. Additional preliminary steps include developing and refining coding schemes used to code open-ended questions (see Methods section for reporting of relevant variables and kappa coefficients), an analysis of the emotional content of the recounted jealousy experience open-ended response using the Linguistic Inquiry and Word Count (LIWC) text analysis program, and some recategorization of responses for certain variables. Prior to final decisions regarding categorization, response frequencies were computed and examined. Responses that were not endorsed, or that were endorsed infrequently, were either combined or excluded from further analyses.

## **Final Analyses and Roadmap of Results**

The final set of analyses corresponds to the three study aims depicted in the current study model (see Figure 1). Given the importance of gender and relationship context as framing independent variables, prior to main study analyses, the association between gender and relationship context is examined.

To explore the phenomenon of jealousy, descriptive information is presented on variables associated with the recounted jealousy experience. Due to the large amount of data involved, this information is summarized in a series of tables grouped by category: involved emotions, jealousy incident characteristics, the jealousy target, jealousy behaviors, and the resolution. Within each table, descriptive information and statistically significant analyses regarding the effect of gender and relationship context on these variables are presented. The final set of analyses determine which variables make the jealousy experience more or less intense and what variables are associated with vulnerability to experiencing jealousy (jealousy frequency).



## **Results**

### ***Missing Data***

No participant elected to prematurely terminate completion of the survey, however individual items were left blank on an infrequent basis. Missing data due to non-response ranged from 1% to 6%. A listwise deletion method was used in individual analyses that had missing data.

### ***Relationship Between Relationship Context and Gender***

Prior to conducting main analyses, the two independent variables of interest in the current study (relationship context and gender) and their association were examined. After relevant exclusions (see Methods section), there were 193 participants in the final sample, equally divided between the two sexes [94 (49%) male; 99 (51%) female]. Sixty-six (34%) participants described jealousy within an exclusive romantic relationship, 73 (38%) within a non-exclusive romantic relationship, and 54 (28%) within a platonic friendship. There was a significant relationship between relationship context and gender,  $\chi^2(2, N=193)=8.07, p>.05$ . As can be seen in Table 4, males were more likely than females to report exclusive romantic relationship jealousy, whereas females were more likely to report platonic friendship jealousy than males. There was no gender difference in the likelihood of reporting non-exclusive romantic relationship jealousy.

**Table 4: Frequency of Jealousy Experiences by Relationship Context and Gender**

<b>Relationship context</b>	<b>Gender</b>	
	<b>Male</b>	<b>Female</b>
Exclusive Romantic	39 <sup>a</sup>	27 <sup>b</sup>
Non-Exclusive Romantic	37 <sup>a</sup>	36 <sup>a</sup>
Platonic Friendship	18 <sup>a</sup>	36 <sup>b</sup>

*Note.* N=193; Values sharing a letter in their superscripts (by row) are not statistically significantly different from one another at the .05 level, based on an analysis of the adjusted residuals for each cell.

## **Main Study Analyses**

The following section summarizes the results of analyses performed 1) to provide descriptive information about the phenomenon of jealousy, 2) to engage in hypotheses testing of research questions regarding how relationship context and gender influence jealousy characteristics, and 3) to investigate what factors affect the intensity and frequency of jealousy.

## **The Phenomenon of Jealousy**

Results regarding the phenomenon of jealousy are presented by category: involved emotions, jealousy incident characteristics, the jealousy target, jealousy behaviors, and the resolution.

**Table 5: Emotional Experience of Jealousy**

DV(s)	Descriptive	Test	Sig. Results*	F,p
<b>Jealousy, Anger, Sadness, Fear, Embarrassment</b> (all rated on 5 point Likert scale)	<u>Jealousy:</u> M= 3.25, SD=1.03 <u>Anger:</u> M=3.08, SD=1.27 <u>Sadness:</u> M=3.24, SD=1.27 <u>Fear:</u> M=2.04, SD=1.20 <u>Embarrass:</u> M=2.28, SD=1.33	MANOVA /ANOVAs  ANOVAs	<u>MANOVA:</u> Relationship context  <u>ANOVAs:</u> <u>Jealousy:</u> Exc= Non-Exc > Friend  <u>Anger:</u> Exc>Friend  <u>Fear:</u> Exc> Non-Exc=Friend	F(10, 352)= 5.24, p<.001  F(2, 180)= 11.49 p<.001  F(2, 180)= 5.22 p=.006  F(2, 180)= 9.05 p<.001
<b>Jealousy Intensity, Frequency</b> (as reported throughout relationship)  (5 point Likert scale)	<u>Intensity:</u> M=2.82, SD=1.20  <u>Frequency:</u> M=2.60, SD=0.91	MANOVA /ANOVAs	<u>MANOVA:</u> Relationship context  <u>ANOVAs:</u> <u>Intensity:</u> Exc = Non-Exc > Friend  <u>Frequency:</u> Exc > Friend	F(4,362)= 4.24, p=.002  F(2,182)= 7.43, p=.001  F(2,182)= 5.05, p=.007

<b>Written story characteristics</b> (% of each category of words in total text sample of recounted jealousy experience)	<u>Total Affect:</u> M=8.2%, SD=5.8%	MANOVA /ANOVAs	<u>MANOVA: Relationship context</u>	F(10, 366)= 2.73, p=.003
	<u>Negative:</u> M=2.6%, SD=2.9%		<u>ANOVAs:</u> <u>Total Affect: Friend &gt; Exc</u>	F(2,187)= 3.82, p=.024
	<u>Positive:</u> M=5.5% SD=4.7%		<u>Positive Emotion: Friend &gt; Exc=Non-Exc</u>	F(2,187)= 9.11, P<.001
	<u>Anxiety:</u> M=0.3%, SD=0.9%			
	<u>Anger:</u> M=1.8% SD=2.5%			

Note. \*= Exc= Exclusive romantic relationships, Non-Exc= Non-exclusive romantic relationships, Friend= Platonic friendships

## Summary

In summary, recounted jealousy experiences involved a number of related negative emotions, including jealousy and more “basic” emotions such as anger, sadness, and fear. These emotions are felt more intensely within the context of romantic relationships than friendships. This pattern of results is replicated with alternate aspects of jealousy, including intensity and frequency of this emotion across a relationship as opposed to at a specific point in time. Not only does it seem that jealousy occurring within a friendship is a less negative emotional experience, additional analyses of the linguistic content of recounted jealousy experiences find that participants reporting friendship jealousy use more positive words to describe the jealousy experience than participants reporting romantic relationship jealousy.

**Table 6: Characteristics of the Jealousy Incident (Coded)**

DV(s)	Descriptive	Test	Sig. Results*	F/ $\chi^2$ ,p
<b>Reason for jealousy</b> (recoded into 2 possible categories- possessiveness vs. worry)	<i>Possessive:</i> 64% <i>Worry:</i> 24% <i>Relationship Loss:</i> 6% <i>Other:</i> 6%	Two binary logistic regressions	<i>Possessiveness</i> Omnibus  <u>Relationship context:</u> Exc=Non-Exc> Friend  <i>Worry</i> Omnibus  <u>Relationship context</u> Friend > Exc=Non-exc	$\chi^2(3)=$ 22.16, p<.001  $\chi^2(2)=$ 19.72, p>.001  $\chi^2(3)=$ 17.50, p=.001.  $\chi^2(2)=$ 14.95, p=.001
<b>Reasonableness of threat</b> (3 points-no/little/clear)	<i>No:</i> 25% <i>Little:</i> 66% <i>Clear:</i> 9%	Two way ANOVA	ns	
<b>Sexual Content</b> (percentage of total word count)	<i>M</i> =0.7%, <i>SD</i> =2.4%	ANOVA	ns	
<b>Sexual Threat</b> (coded yes/no; romantic relationship stories only)	<i>Yes:</i> 20% <i>No:</i> 80%	Binary logistic regression	ns	

Note. \*= Exc= Exclusive romantic relationships, Non-Exc= Non-exclusive romantic relationships, Friend= Platonic friendships

### Summary

Relationship context again proved influential, this time with regard to characteristics of the jealousy incident. A desire for possessiveness seemed to underlie romantic relationship jealousy, whereas worry about relationship diminishment and loss was associated with friendship jealousy. Most recounted jealousy experiences involved relationship violations, but a significant minority (25%) occurred in the absence of a clear threat. Sexual themes and content in the

recounted jealousy stories were relatively uncommon and did not vary by relationship context or gender, despite strong prior research documenting sexual threats as particularly triggering for males.

**Table 7: The Jealousy Target**

DV(s)	Descriptive	Test	Sig. Results*	F/ $\chi^2$ ,p
<b>Who is the jealousy target?</b> (2 possible codes-one person or many)	<i>One: 74%</i> <i>Many: 26%</i>	Binary logistic regression	ns	
<i>Individual and Jealousy Target Relationship</i>				
<b>Individual know JT?</b> (yes/no)	<i>Knew: 60%</i> <i>Didn't know: 40%</i>	Binary logistic regression	Omnibus <u>Relationship context</u> Friend>Non-Exc< Exc.	$\chi^2(3)= 32.65$ , $p<.001$  $\chi^2(2)= 24.01$ , $p<.001$
<b>Relationship with JT important?</b> (was jealousy target recorded in relationship convoys concentric circle measure?; recoded to yes/no)	<i>Not: 85%</i> <i>3<sup>rd</sup> circle: 2%</i> <i>2<sup>nd</sup> circle: 8%</i> <i>Closest: 5%</i>	Binary logistic regression	Omnibus  <u>Relationship context:</u> Friend> Exc	$\chi^2(3)= 12.12$ , $p=.007$  $\chi^2(2)= 8.39$ , $p=.015$
<b>How long individual know JT?</b> (new: 3 months or less, old: more than 3 months)	<i>New: 38%</i> <i>Old: 64%</i>	Binary logistic regression	ns	

<b>Social circle overlap with JT</b> (5 point scale)	<i>M</i> =2.40, <i>SD</i> =1.42	Two-way ANOVA	<u>Gender:</u> Female>Male  <u>Relationship Context:</u> Friend> Exc	<i>F</i> (1,117)=4.50, <i>p</i> =.035  <i>F</i> (2,117)=5.98, <i>p</i> =.003
<i>Friend/Partner and Jealousy Target Relationships</i>				
<b>Friend/Partner know JT?</b> (yes/no)	<i>Knew</i> : 11% <i>Didn't know</i> : 89%	Binary logistic regression	ns	
<b>How friend/partner knew JT?</b> (selected from a list)	<i>Cross-sex Friend</i> : 46%  <i>Same-sex Friend</i> : 24%  <i>Acquaintance</i> : 8%  <i>Other</i> : 8%  <i>Ex</i> : 7%  <i>Coworker</i> : 2%	Two binary logistic regressions	<i>Cross-sex Friend</i> Omnibus  <u>Relationship context:</u> Exc>Non-exc>Friend  <i>Same-sex Friend</i> Omnibus  <u>Relationship context:</u> Friend>Non-exc>Exc	$\chi^2(3)= 18.78$ <i>p</i> <.001  $\chi^2(2)= 15.90$ <i>p</i> >.001  $\chi^2(3)= 50.32$ <i>p</i> <.001  $\chi^2(2)= 40.39$ <i>p</i> <.001
<b>How long friend/partner know JT?</b> (new: 3 months or less, old: more than 3 months)	<i>New</i> : 39% <i>Old</i> : 61%	Binary logistic regression	ns	

<b>Friend/partner social circle overlap with JT</b> (5 point scale)	<i>M</i> =3.21, <i>SD</i> =1.29	Two-way ANOVA	ns	
<b>Share something unique with JT?</b> (yes/no)	<i>Yes</i> : 51% <i>No</i> : 49%	Binary logistic regression	ns	
<b>Share what?</b> (Check all that apply)	<u>Past Exp</u> : 22% <u>Curr Exp</u> : 21% <u>Culture</u> : 9% <u>Personality</u> : 13% <u>Other</u> : 11%	Not analyzed further		

*Note.* \*= Exc= Exclusive romantic relationships, Non-Exc= Non-exclusive romantic relationships, Friend= Platonic friendships

### Summary

These set of analyses examined the members of the jealousy triangle, with a focus on the jealousy target. The jealousy target seems to most often be a single person, known in some capacity by the individual, but not someone considered to be of particular importance. It is more likely that the jealousy target is known by the friend/partner, and is usually considered a friend. There is often a unique past or current experiences shared by the jealousy target and the friend/partner that are not also shared by the individual and the friend/partner.

When examining how gender and relationship context may affect the results, relationship context again proves impactful. Within friendships, individuals were more embedded with the jealousy target than within romantic relationships, in terms of individuals knowing, feeling close to, and sharing more social contacts with the jealousy target. The differences were most pronounced between the friendship jealousy experiences and exclusive romantic relationship



jealousy experiences. The pattern for non-exclusive romantic relationship jealousy was similar to, but not as distinct from, friendship jealousy as exclusive romantic relationship jealousy.

One of the only gender differences found in the current study was that females had more social circle overlap with the jealousy target than males, in line with previous research showing females to have more extensive social networks than males.

**Table 8: Jealousy Behaviors**

DV(s)	Descriptive	Test	Sig. Results*	F,p		
<i>Individual</i>						
<b>Jealousy behaviors</b> (list, then most characteristic, further analyses performed on 5 more frequent behaviors, depicted in bold)	Overall/Most Characteristic	Binary logistic regressions	<i>Calm talk</i>	$\chi^2(3)=23.17, p<.001$		
	<b>Calm Talk: 44%/23%</b>		Omnibus			
	<u>Verb Conf: 15%/7%</u>		<u>Relationship context:</u>		$\chi^2(2)=20.43, p<.001$	
	<u>Phy Threat: .5% / 0%</u>		Exc > Friend			
	<b>Body Lang: 36%/10%</b>				<i>Body language</i>	$\chi^2(3)=13.28, p=.004$
	<b>Get Back: 17% / 8%</b>		Omnibus			
	<b>Avoided: 44% / 21%</b>				<u>Relationship context:</u>	$\chi^2(2)=12.60, p=.002$
	<b>Spied: 24% / 10%</b>				Exc > Friend	
	<u>Threat End: 7% / 2%</u>				Get back:	ns
	<u>Inc Affect: 15% / 2%</u>				ns	
<u>Calm Talk JT: 6% / .5%</u>		Avoided:	ns			
<u>Agg Confr JT: 3% / .5%</u>		ns				
<u>Other: 5% / 8%</u>				$\chi^2(3)=22.12, p<.001$		
<u>Nothing: 17% / 4%</u>		<i>Spied:</i>	Omnibus:			

			<u>Relationship context:</u> Exc>Non-exc>Friend  <i>Most characteristic?</i> Calm talk: ns Body lang: ns Get back: ns Spied: ns Avoid: ns	$\chi^2(2)=18.61,$ $p<.001$
<b>Confide in others</b> (yes, no)	Yes: 62% No: 38%	Binary logistic regression	Omnibus  <u>Gender:</u> Female>Male  <u>Relationship context:</u> Exc> Friend	$\chi^2(3)=13.70,$ $p=.003$  $\chi^2(1)=7.66,$ $p=.006$  $\chi^2(2)=8.43,$ $p=.015$
<b>Confide: Who</b> (if yes to confide, each category: yes/no)	<u>Family:</u> 45% <u>Same-Sex Friend:</u> 95% <u>Cross-Sex Friend:</u> 67% <u>Acquaintance:</u> 12% <u>Coworker:</u> 3%	Binary logistic regressions	Family: ns Same-Sex Friend: ns Cross-Sex Friend: ns Acquaintance: ns	
<b>Did friend/partner know individual was jealous?</b> (yes/no)	Yes: 48% No: 53%	Binary logistic regression	Omnibus  <u>Relationship context:</u> Exc>Friend	$\chi^2(3)=30.49,$ $p<.001$  $\chi^2(2)=26.15,$ $p<.001$

<b>If didn't know, why not?</b> (coded, 6 categories)	<u>Inappropriate:</u> 15% <u>Neg Impact:</u> 12% <u>Own Issue/Don't hurt F/P:</u> 9% <u>Deliberate Hid:</u> 10% <u>Not big deal:</u> 18% <u>Didn't tell/other:</u> 35%	Not analyzed further		
<b>If did know, how knew?</b> (coded, 4 categories)	<u>Told F/P:</u> 57% <u>F/P figured it out:</u> 36% <u>Someone told F/P:</u> 1% <u>Dk/Unclear:</u> 6%	Binary logistic regressions	<i>Told friend/partner</i> Omnibus  <u>Relationship context:</u> Exc>Friend  <i>F/P figured it out</i> Omnibus  <u>Relationship context:</u> Exc>Friend	$\chi^2(3)=13.31, p=.004$  $\chi^2(2)=12.67, p=.002$  $\chi^2(3)=10.89, p=.012$  $\chi^2(2)=8.64, p=.013$

Note. \*= Exc= Exclusive romantic relationships, Non-Exc= Non-exclusive romantic relationships, Friend= Platonic friendships

### Summary

The most commonly reported jealousy behaviors (calmly talking to or avoiding the friend/partner, using negative body language, spying) include both direct and indirect forms of communication. Expressing jealousy in these ways was most common in exclusive romantic relationships, whereas these forms of jealousy expression were reported less frequently in friendships. Many participants confided in others about their jealousy experience, especially

females and participants in exclusive romantic relationships. Most commonly, participants confided to friends, but family members were also frequently mentioned.

About half of the friend/partners knew that the participant was jealous, and this was more common in exclusive romantic relationships. The majority of the time, the friend/partner knew because the participant told, but often the friend/partner figured it out, especially in romantic relationships.

**Table 9: The Resolution**

DV(s)	Descriptive	Test	Sig. Results*	F/ $\chi^2$ ,p
<b>Relationship changes post-incident</b> (Overall how felt, commitment, trust, satisfaction- all 5 point scales)	<u>Overall: M=2.77, SD=1.17</u> <u>Commit: M=2.70, SD=1.10</u> <u>Trust: M=2.60, SD=1.01</u> <u>Satisfaction: M=2.58, SD=1.11</u>	MANOVA/ ANOVAs	ns	
<b>Happen again?</b> (yes/no)	Yes: 15% No: 85%	Binary logistic regression	ns	
<b>Still in friendship/relationship?</b> (yes/no)	Yes: 55% No: 45%	Binary logistic regression	Omnibus  <u>Relationship context:</u> Friend > Non-Exc=Exc	$\chi^2(3)=36.05, p<.001$  $\chi^2(2)=25.06, p<.001$
<b>How much jealousy contributed to end of friend/relationship</b> (5-	M=2.89, SD=1.56	Two-way ANOVA	ns	

point scale)				
<b>Positive Outcomes</b> (yes/no)	Yes: 52% No: 49%	Binary logistic regression	ns	
<b>Positive outcomes-what?</b> (list of 6, check all that apply)	<u>Enhanced Communication:</u> 32% <u>Reach out others:</u> 34% <u>Improve self:</u> 47% <u>Increased affection:</u> 23% <u>Renegotiate relationship rules:</u> 15% <u>Other:</u> 4%	Not analyzed further		
<b>If happened again, handle the same way?</b> (yes/no)	Yes: 59% No: 41%	Binary logistic regression	ns	
<b>Lessons learned</b> (coded from open-ended response: <i>internal</i> (lesson about self) or <i>external</i> (lesson about others))	<i>Internal:</i> 87% <i>External:</i> 14%	Binary logistic regression	ns	

Note. \*= Exc= Exclusive romantic relationships, Non-Exc= Non-exclusive romantic relationships, Friend= Platonic friendships

### Summary

Following the jealousy experience, participants experienced a slight decline in how they felt about the relationship in general, as well as how committed, trusting, and satisfied they were with their friend/partner. These post-jealousy changes were experienced similarly regardless of

gender or relationship context. The majority of participants did not report repeated jealousy experiences, although slightly more than half of participants were no longer in the relationship, particularly those who had experienced jealousy within a romantic relationship. Jealousy was reported to be an important reason for the relationship dissolution for many participants.

Positive outcomes following the jealousy experience also occurred, with about half of participants endorsing that the jealousy experience caused them to improve themselves, reach out to others, and enhance communication with their friend/partner. When reflecting upon the jealousy experience, slightly more than half of participants felt they would handle things the same way in the future. Participants also described the lessons learned from the experience, with the majority feeling that they learned something about themselves.

## **Factors Affecting Jealousy Intensity**

The second goal of the study was to determine what factors made the jealousy experience weaker or stronger. The strength of the jealousy experience was defined in two ways: jealousy intensity during the recounted jealousy experience and frequency of jealousy across the relationship. The first set of analyses tested hypotheses regarding variables affecting jealousy intensity. The analyses are organized by type of variable being tested.

### **Individual Background Variables: Individual Characteristics**

The initial set of hypotheses posited that certain individual characteristics of the participant would be associated with more intense jealousy ratings. First, the association between gender and jealousy intensity was examined. Males ( $M=3.24$ ,  $SD=.98$ ) and females ( $M=3.25$ ,  $SD=1.08$ ) experienced very similar levels of jealousy intensity, and a one-way ANOVA failed to find significant group differences,  $F(1, 189)=.01$ ,  $p=.929$ . In addition, it was hypothesized that females reporting a friendship jealousy experience would experience more intense jealousy than

males reporting a friendship jealousy experience. In the current sample, females in friendships reported slightly higher rates of jealousy intensity ( $M=2.81$ ,  $SD=1.19$ ) than males in friendships ( $M=2.56$ ,  $SD=.92$ ) but a one-way ANOVA did not find significant differences between the two genders ( $F(1,52)=.61$ ,  $p=.439$ ).

Next, securely attached individuals were hypothesized to experience more intense jealousy than insecurely attached individuals. In the current sample, 47% ( $N=90$ ) of participants were categorized as securely attached, 42% ( $N=81$ ) as avoidantly attached, and 11% ( $N=21$ ) as anxiously attached. This hypothesis was not supported. Results of a one-way ANOVA found no statistically significant difference between groups ( $F(2,187)=1.22$ ,  $p=.297$ ). Reported jealousy intensity ratings were lowest for avoidantly attached individuals ( $M=3.14$ ,  $SD=1.04$ ) and highest for anxiously attached individuals ( $M=3.52$ ,  $SD=.75$ ), with securely attached individuals in the middle ( $M=3.26$ ,  $SD=1.06$ ).

Thirdly, individuals with impactful past jealousy experiences were expected to experience more intense jealousy than individuals with less impactful past jealousy experiences. Participants had various responses to the question, “How much do you think your past jealousy experiences have impacted how you approach current or future relationships?” 11% ( $N=21$ ) reported “none”, 25% ( $N=49$ ) reported “little”, 31% ( $N=59$ ) reported “some”, 26% ( $N=50$ ) reported “much”, and 7% ( $N=13$ ) reported “very much”. A linear regression supported the hypothesis that impactful past jealousy experiences could predict jealousy intensity ratings,  $F(1, 188)=20.96$ ,  $p<.001$ , such that an increase in how impactful past jealousy experiences were resulted in an increase in jealousy intensity ratings.

Finally, individuals with higher self-esteem would report less intense jealousy than individuals with lower self-esteem. On a scale of 10-40, with higher numbers indicated higher levels of self-esteem, the current sample reported relatively high levels of self-esteem ( $M=31.61$ ,

$SD=5.23$ ). A linear regression supported the hypothesis that higher self-esteem ratings were associated with lower jealousy intensity ratings,  $F(1, 189)= 6.04, p=.015$ , such that for every unit increase in self-esteem, there was a decrease of .035 in the jealousy intensity rating.

### **Individual Background Characteristics: Jealousy Target Characteristics**

Two hypotheses centered on characteristics of the jealousy target that were thought to be related to increases in jealousy intensity. First, for individuals in exclusive or non-exclusive romantic relationships, it was posited that if the jealousy target was romantically available (“single”), the individual would experience more intense jealousy. Participants reported that the majority (83%,  $N=75$ ) of jealousy targets were not in an exclusive romantic relationship. A one-way ANOVA did not reveal any statistically significant differences between groups ( $F(1,90)= 1.80, p=.183$ ), and thus the hypothesis was not supported.

Next, it was hypothesized that the more the jealousy target was perceived to possess traits valued by the friend/partner, the more intense jealousy the individual would experience. Participants reported the traits their friend/partner valued and then indicated whether they (the participant) or the jealousy target possessed higher levels of these traits. For the top reported value, participants indicated that nearly half the time (47%,  $N=51$ ) they possessed higher levels of the trait. Thirty-one % of the time ( $N=33$ ), the participant rated themselves and the jealousy target as having equal levels of the valued trait. 22% ( $N=24$ ) of the time the participant felt that the jealousy target possessed more of the valued trait. A one-way ANOVA did not reveal any statistically significant differences between groups ( $F(2, 112)= .595, p=.553$ ) and thus the hypothesis was not supported.



## Dyadic Background Variables

Because jealousy incidents are inherently triangular, three sets of dyadic relationships are involved: 1) the individual's relationship with the friend/partner, 2) the individual's relationship with the jealousy target, and 3) the friend/partner's relationship with the jealousy target. Results of hypothesis testing regarding how characteristics of each of these dyadic relationships are related to jealousy intensity ratings are reported below.

### *Dyadic Background Variables: Participant and Friend/Partner*

A number of hypothesis centered on the relationship the participant had with the friend/partner. First, it was hypothesized that individuals would experience more intense jealousy in both exclusive and non-exclusive romantic relationships than in friendships. This hypothesis was supported. Results of a one-way ANOVA confirmed an overall statistically significant difference between groups,  $F(2,188)= 10.75, p<.001$ . Reported jealousy intensity was lowest for participants in friendships ( $M=2.72, SD= 1.11$ ) and statistically significantly higher for individuals in non-exclusive romantic relationships ( $M=3.46, SD= .82$ ) and exclusive romantic relationships ( $M=3.45, SD= 1.03$ ).

Next, it was hypothesized that the more individuals in romantic relationships felt close to their partner, committed to their partner, and satisfied with the relationship, the most intense jealousy they would feel. Overall, at the time of the jealousy experience, participants reported levels of closeness ( $M=3.62, SD=1.18$ ), commitment ( $M=3.56, SD=1.16$ ) and relationship satisfaction ( $M=3.20, SD=1.13$ ) as falling between “moderately” and “pretty” on a 5-point Likert scale. These hypotheses were not supported, as linear regression analyses did not reveal statistically significant associations between closeness ( $F(1,122)= .84, p=.360$ ), commitment ( $F(1,123)= .17, p=.680$ ), or relationship satisfaction ( $F(1,122)= .54, p=.464$ ) and jealousy intensity.

A second set of hypotheses predicted that higher levels of certain relationship variables would be associated with lower levels of reported jealousy intensity. Specifically, trust in one's partner ( $M=3.49$ ,  $SD=1.18$ ), partner's level of commitment to the participant ( $M=3.41$ ,  $SD=1.28$ ) and partner's openness/transparency with the participant ( $M=3.33$ ,  $SD=1.13$ ) were thought to be associated with lower levels of jealousy intensity. These hypotheses were partially supported. Trust was found to significantly predict jealousy intensity ratings ( $F(1,122)= 7.00$ ,  $p=.009$ ), such that higher levels of trust were associated with less intense ratings of jealousy. Linear regressions failed to find a significant association between partner's level of commitment to the participant ( $F(1,122)= 2.53$ ,  $p=.114$ ), or partner's level of openness/transparency with the participant ( $F(1,123)= .45$ ,  $p=.504$ ), and jealousy intensity ratings.

*Dyadic Background Variables: Individual and Jealousy Target*

Given that there is no known research about how the relationship between an individual and the jealousy target may influence the individual's level of jealousy intensity, an exploratory analysis was conducted to determine if an individual's social circle overlap with the jealousy target was related to the individual's jealousy intensity ratings. On average, participants rated the social circle overlap between themselves and the jealousy target as between somewhat and moderately overlapping ( $M=2.41$ ,  $SD=1.37$ ). A linear regression did find a statistically significant association,  $F(1,179)= 5.71$ ,  $p=.018$ , such that more social circle overlap between the individual and the jealousy target was associated with decreased ratings of jealousy intensity.

*Dyadic Background Variables: Friend/Partner and Jealousy Target*

The final set of relationship variables tested were characteristics of the relationship between the friend/partner and the jealousy target. Specifically, it was predicted that longer relationship length and more social circle overlap between the friend/partner and the jealousy target would predict more intense jealousy ratings by the participant. Overall, participants

reported that their friend/partner and the jealousy target knew each for less than three months 40% of the time ( $N=61$ ), and for three months or longer 60% of the time ( $N=94$ ). On average, participants rated the social circle overlap between their friend/partner and the jealousy target as moderately overlapping ( $M=3.21$ ,  $SD=1.29$ ). These hypotheses were not supported. A one-way ANOVA did not find differences between relationship length groups (three months or less vs. more than three months) and jealousy intensity ratings ( $F(1,151)=.13$ ,  $p=.716$ ), nor did a linear regression reveal a significant association between social circle overlap and jealousy intensity ratings,  $F(1,187)=.35$ ,  $p=.553$ .

### **Incident Variables**

The final category of variables posited to have an association with jealousy intensity ratings were incident variables, or characteristics of the recounted jealousy experience. Recall the coding system used to classify jealousy threats as representing no articulated threat, some cause for concern, or a clear violation. It was hypothesized that jealousy threats that had a somewhat or very clear basis for jealousy, as rated by an outside observer, would be associated with more intense jealousy than jealousy threats that had no clear basis for jealousy. This hypothesis was supported,  $F(1,185)=6.37$ ,  $p=.012$ . Individuals whose jealousy threats were classified as containing no articulated threat (25%,  $N=47$ ) had lower average jealousy intensity ratings ( $M=2.91$ ,  $SD=1.06$ ) than individuals whose jealousy threats were classified as containing some cause for concern or a clear violation (75%,  $N=142$ ,  $M=3.35$ ,  $SD=1.01$ ).

Lastly, it was hypothesized that individuals who learned about the jealousy incident through their partner's disclosure would experience less intense jealousy than individuals who learned about the jealousy incident through other channels. Participants reported that their friend/partner learned about the jealousy by being there at the time (41%,  $N=79$ ), by disclosure on the part of the participant (21%,  $N=39$ ), and through other channels (38%,  $N=73$ ). The

hypothesis was not supported, as a one-way ANOVA failed to find significant group differences in jealousy intensity ratings,  $F(2,186)= 1.07, p=.345$ .

## **Summary**

A number of variables were posited to be associated with participant jealousy intensity ratings during the jealousy experience, categorized into: 1) background characteristics of the participant, 2) dyadic relationship variables between members of the jealousy triangle, and 3) incident variables.

The first individual background characteristic examined was gender. Overall, men and women experienced similar levels of jealousy intensity during the recounted jealousy experience. In addition, contrary to expectations, females in friendships did not experience more intense jealousy than males in friendships.

An individual's attachment style was not significantly associated with jealousy intensity, although mean ratings found avoidantly attached individuals had the lowest jealousy intensity ratings and anxiously attached individuals had the highest ratings, with securely attached individuals reporting mid-levels of jealousy intensity. Impactful past jealousy experiences represent a risk factor for jealousy intensity, as past experiences with jealousy were associated with increased levels of jealousy intensity during the recounted jealousy experience. Self-esteem proved to be a protective factor, with higher levels of self-esteem associated with lower levels of jealousy intensity.

Qualities of the jealousy target, such as romantic availability and possessing valued traits, were not found to be associated with participants' ratings of jealousy intensity.

Next, dyadic relationship variables were examined. Relationship context was associated with differing levels of jealousy intensity ratings. Individuals in both types of romantic relationships rated their jealousy as significantly more intense than individuals in friendships.

With regard to aspects of the dyadic relationship between members of the jealousy triangle and associations with jealousy intensity, two variables were related. The first was trust, such that participants who felt more trusting towards their partner had lower levels of jealousy intensity ratings. The second was social circle overlap between the participant and the jealousy target, such that more social circle overlap was associated with less intense jealousy ratings.

Finally, individuals whose recounted jealousy experience revealed a somewhat or very clear basis for jealousy had more intense jealousy than individuals whose jealousy experience had no clear basis for jealousy.

## **Factors Affecting Jealousy Frequency**

The final goal of the current study was to test hypotheses related to factors that would affect the frequency an individual would feel jealousy over the course of their relationship. Jealousy frequency is conceptualized as a related, but distinct, construct from jealousy intensity. Jealousy frequency was examined in two ways. First, a number of individual background variables were tested to see if there was an association with jealousy frequency. Second, participants reporting no jealousy experience were compared to participants who did report a jealousy experience.

### **Individual Background Variables**

The relationship between four individual background variables and jealousy frequency over the course of an individual's relationship was tested. First, the association between gender and jealousy frequency was examined. Males ( $M=2.64$ ,  $SD=.93$ ) and females ( $M=2.55$ ,  $SD=.88$ ) experienced very similar levels of jealousy frequency, and a one-way ANOVA failed to find significant group differences,  $F(1, 186)=.46$ ,  $p=.501$ . Next, the association between relationship context and jealousy frequency was examined. A one-way ANOVA revealed an overall

statistically significant difference between groups,  $F(2,185)= 4.08, p=.018$ . Individuals in exclusive romantic relationships ( $M=2.80, SD=.92$ ) experienced significantly more frequent jealousy across the relationship than individuals in friendships ( $M=2.34, SD=.83$ ). Individuals in non-exclusive romantic relationships ( $M=2.61, SD=.90$ ) did not differ significantly in their reported jealousy frequency from either group. It was hypothesized that females reporting a friendship jealousy incident would experience more frequent jealousy than males reporting a friendship jealousy incident. In the current sample, females in friendships reported slightly lower rates of jealousy frequency ( $M=2.55, SD=.88$ ) than males in friendships ( $M=2.64, SD=.93$ ) but a one-way ANOVA did not find significant differences between the two genders ( $F(1,186)= .46, p=.501$ ).

Second, securely attached individuals were hypothesized to experience less frequent jealousy than insecurely attached individuals. This hypothesis was not supported, as a different pattern of results emerged. Results of a one-way ANOVA found an overall statistical significant difference between groups,  $F(2,184)= 7.46, p=.001$ . Reported jealousy frequency was highest for anxiously attached individuals ( $M=3.30, SD=.80$ ), who differed significantly from both securely attached individuals ( $M=2.50, SD=.86$ ) and avoidantly attached individuals ( $M=2.51, SD=.90$ ).

Next, individuals with impactful past jealousy experiences were hypothesized to experience more frequent jealousy than individuals with less impactful past jealousy experiences. A linear regression supported the hypothesis that impactful past jealousy experiences could statistically significantly predict jealousy frequency ratings,  $F(1, 186)= 16.38, p<.001$  such that an increase in impactful past jealousy experiences resulted in an increase in jealousy frequency ratings.

Finally, individuals reporting higher self-esteem would report less frequent jealousy than individuals reporting low self-esteem. A linear regression supported the hypothesis that higher

self-esteem ratings would be associated with lower jealousy frequency ratings,  $F(1, 186) = 21.29$ ,  $p < .001$ , such that for every unit increase in self-esteem, there was a decrease of .056 in the jealousy frequency rating.

### **Individuals Reporting No Jealousy**

A small number of participants reported no jealousy experiences during college ( $N=13$ , 6%). This group is of particular interest because these individuals did not report what appears to be a relatively normative experience. In order to determine whether participants reporting jealousy differed from those who did not report a jealousy experience, a comparison of these two groups was conducted.

First, the demographic variables of these two groups were compared. No statistically significant differences were found across gender ( $\chi^2(1) = 1.57$ ,  $p = .210$ ), age ( $\chi^2(8) = 5.34$ ,  $p = .721$ ), ethnicity ( $\chi^2(4) = 3.68$ ,  $p = .451$ ), or SES ( $F(1,167) = .22$ ,  $p = .643$ ). Next, scores on individual background variables were compared. No statistically significant differences were found by adult attachment category ( $\chi^2(2) = 1.86$ ,  $p = .395$ ), self-esteem ( $F(1,204) = .35$ ,  $p = .552$ ), or likelihood of having a current romantic partner ( $\chi^2(1) = .39$ ,  $p = .533$ ). Participants reporting no jealousy had fewer romantic relationship partners over their lifetime than participants reporting a jealousy story ( $F(1,204) = 7.00$ ,  $p = .009$ ).

### **Individuals Reporting Two Jealousy Experiences**

A minority of participants ( $N=40$ , 19%) reported two jealousy experiences: one romantic relationship and one friendship jealousy experience. This group represents individuals who may be particularly vulnerable to jealousy. These participants were compared to participants who reported only one jealousy experience.

More females and fewer males than expected reported two jealousy experiences ( $\chi^2(1) = 3.79, p = .050$ ). In addition, more upperclassmen and fewer underclassmen than expected reported two jealousy experiences ( $\chi^2(1) = 10.09, p = .001$ ). There were no statistically significant differences between groups on ethnicity ( $\chi^2(4) = 4.38, p = .357$ ) or SES ( $F(1,155) = .01, p = .948$ ). Groups were also compared on individual background variables. More avoidantly attached individuals and fewer securely attached individuals than expected reported multiple jealousy experiences ( $\chi^2(2) = 6.00, p = .049$ ). No significant group differences were found regarding ratings of self-esteem ( $F(1,193) = .52, p = .472$ ), likelihood of having a current romantic partner ( $\chi^2(1) = .13, p = .721$ ), or number of lifetime romantic relationship partners ( $F(1,193) = 2.01, p = .158$ ).



## **Discussion**

The following section presents a review and discussion of the findings from the current study that will deepen the understanding of the phenomenon of jealousy among close relationships of emerging adults within a college setting. Findings concerning three primary study aims are reviewed, with a particular focus on how such findings make unique contributions to the existing jealousy literature. This paper concludes with a discussion of the limitations of the present study and avenues for future research.

### ***The Phenomenon of Jealousy***

The first aim of the current study was to provide descriptive information about how jealousy is experienced and expressed by emerging adults in a college setting. Asking participants to describe real-life jealousy experiences rather than relying on hypothetical situations represents a distinct methodological advantage, as this approach provides greater external validity than more traditional methodologies that have presupposed the situations that emerging adults would find jealousy-producing.

A discussion of the phenomenon of jealousy begins with an overall impression regarding the likelihood of reporting jealousy during college. Next, the way gender and relationship context shape the experience of jealousy is examined. Finally, targeted elements of the recounted jealousy experience are explored, including involved emotions, jealousy incident characteristics, the jealousy target, jealousy behaviors, and the resolution.

### **Likelihood of Experiencing Jealousy**

Experiencing jealousy while in college is a normative experience. Of the 227 completed surveys, only 13 (6%) participants stated they had not experienced jealousy while in college. On average, participants rated their reported jealousy experience as moderately intense. Clear

evidence of the normative nature of jealousy experiences during college is an important contribution of the current study to the overall jealousy literature. While many studies have been conducted to examine specific features of jealousy, few studies have taken a step back to explore the nature and prevalence of this phenomenon.

## **Gender and Relationship Context**

A main goal of the current study was to determine what, if any, differences there were between males and females with regard to jealousy and what, if any, differences there were between jealousy experiences within romantic relationships and friendships. To differentiate among romantic relationships that were exclusive and non-exclusive in nature, and friendships that had a sexual or romantic component versus those that did not, relationships were categorized into three groups: exclusive romantic relationships, non-exclusive romantic relationships, and platonic friendships. The inclusion of non-exclusive romantic relationships serves as an acknowledgement of the heterogeneity of romantic relationships and is a unique contribution to the field.

An examination of the interplay of gender and relationship context revealed that these two factors are related. Specifically, males were more likely to report jealousy in an exclusive romantic relationship than females and females were more likely to report jealousy in a platonic friendship than males. One explanation of this finding relates to the widely cited gender difference in response to sexual and emotional infidelity (e.g., Buss, Larsen, Westen & Semmelroth, 1992; Daly & Wilson, 1988; Sagarin et. al, 2003). If men are more sensitive to jealousy threats involving sexual breaches than women are, then it follows that men would report jealousy at higher levels in romantic relationships than women. Non-exclusive romantic relationships can also be sexual in nature, but by definition, these relationships do not assume sexual exclusivity. There is also a robust literature detailing the special emphasis females place

on same-sex friendships to fulfill emotional needs (see Maccoby, 1998; Parker & Asher, 1993), so it is not surprising females become jealous when these bonds are threatened. The nature of female same-sex friendships may also make them particularly salient jealousy contexts. Some authors assert that close female same-sex friendships are more fragile and less durable than close male same-sex friendships (e.g., Benenson & Christakos, 2003). The current finding that women report more jealousy in friendships than men is in line with previous research findings with a younger adolescent sample (Parker, Low, Walker, & Gamm, 2005).

It is also useful to ask if males experience more jealousy in exclusive romantic relationships than females or whether males merely consider exclusive romantic relationships a more acceptable context for reporting jealousy. The term homophobia has been coined to describe heterosexual males' fear of being thought gay (McCormack & Anderson, 2014). This fear has long dissuaded males from acting in a way that might be considered homosexual or feminine (McCreary, 1994), which could include admitting jealousy within a close same-sex friendship.

Beyond influencing the context of the jealousy experience, the jealousy experiences of males and females were remarkably similar. The jealousy experiences within different types of close peer relationships, however, proved to be very different. This pattern of main effects was replicated across study analyses, and was not qualified by significant interactions between gender and relationship context. These findings are further explored in the following sections, which discuss the recounted jealousy experience by previously outlined categories.

## **Involved Emotions**

Jealousy during the reported incident occurred alongside other negative emotions such as anger, sadness, fear, and embarrassment, supporting the notion that jealousy is a blended rather than completely distinct emotion (Bringle & Buunk, 1985; Pfeiffer & Wong, 1989; Salovey &

Rodin, 1989; Sharpsteen, 1993). Jealousy was felt more intensely and experienced more frequently in a romantic context than in a friendship context. Romantic relationship jealousy and friendship jealousy were also described differently, based on an analysis of the text used in the recounted jealousy experience. Friendship jealousy included more overall affective words and, in particular, more positive words than either exclusive or non-exclusive romantic jealousy stories.

Taken together, these results raise the question of whether romantic relationship jealousy and friendship jealousy are qualitatively different experiences. Both events fit the definition of jealousy: a negative reaction to a valued other's interest in, or relationship with, another person. Yet, from an emotional standpoint, these experiences are markedly different. Jealousy occurring in romantic relationships is uniformly more negative, intense, and pervasive. Exclusive romantic relationship jealousy most clearly exemplifies this, with non-exclusive romantic relationship jealousy adhering to this pattern, but to a lesser degree. Friendship jealousy is not only a less negative experience generally, but it is described in a more overall positive context.

Exclusive romantic relationships could be a particularly salient context for jealousy for a number of reasons. First, there may be more to lose, and thus more to protect, in exclusive romantic relationships. Studies have found exclusive romantic relationships are rated as being of higher quality and including more benefits than friendships, even when romantic relationships are shorter in duration than friendships (e.g., Davis & Todd, 1982). Perceptions may play a role as well. The "love is blind" phenomenon involves the tendency to perceive a romantic partner in an overly positive way and is associated with both positive outcomes and jealousy in response to imagined threats (Swami et al., 2012). Recall that jealousy is often a response to a threat to a valued relationship (Bringle, 1991). Thus, if exclusive romantic relationships represent important, high quality, beneficial relationships that are perceived especially positively, then it follows that when an interloper threatens these relationships, jealousy would be readily elicited.

Second, different expectations for exclusive romantic relationships versus friendships may be related to different emotional responses to relationship threats. Inherent in the definition of an exclusive romantic relationship is an agreement that certain relationship benefits, including sexual access and emotional connectedness, are not experienced with others. With this expectation in place, involvement with another would represent a clear violation and likely would be accompanied by strong emotional reactions such as jealousy. The situation is different with friendships, as social norms do not dictate that these relationships are exclusive in nature. Finally, the fact that exclusive romantic relationships involve both deep emotional and sexual connections may put these relationships at risk for two kinds of jealousy—emotional and sexual—whereas platonic friendships are only at risk for emotional jealousy. Alternately, it could be specifically the sexual component of romantic relationships that primes individuals to perceive threat and respond to it with strong feelings of jealousy.

### **Jealousy Incident Characteristics**

In the current study, the underlying reason for jealousy was specifically examined. Overall, possessiveness is the root cause for jealousy in the majority of jealousy experiences, with worry about the diminishment or loss of the relationship as the second most common reason cited. Jealousy in response to the actual loss of relationship rewards was only reported in 6% of jealousy experiences. This highlights the role of jealousy as a preemptive emotion, one that serves the function of protecting important bonds before they are severed or lost. In addition, the finding that individuals in romantic relationships were more likely to cite possessiveness and individuals in friendships were more likely to cite worry about relationship loss or diminishment as the reason for jealousy further illustrates how romantic and friendship jealousy differ. The desire to keep the valued partner for oneself seems to fuel romantic relationship jealousy, even in non-exclusive romantic relationships in which exclusivity goes against the social agreement

between partners. Within friendships, jealousy appears to be more about worrying that the friendship might be changed or damaged.

Coders also rated the recounted jealousy experience regarding the reasonableness of the jealousy threat. Only a few jealousy experiences (9%) detailed clear relationship violations; the majority of stories described a potential threat (66%). There was no association between gender or relationship context on the reasonableness of the jealousy threat. Again, this points to jealousy as an emotion elicited predominantly in ambiguous situations, perhaps because protecting important bonds is most likely to be successful before the occurrence of an egregious action that would end the entire relationship. Twenty-five percent of jealousy stories in the current study described a jealousy threat that had no apparent cause for concern. Within the jealousy literature, a subset of jealousy threats has been described in this manner. When compared to individuals responding to real threats, individuals reporting jealousy in the face of imagined threats have consistently had the most negative outcomes (e.g., Buunk & Dijkstra, 2006). These individuals would be an interesting subgroup to focus on in future studies. It may be that these individuals have certain defining characteristics, a unique way of experiencing or expressing jealousy, or reliably more negative outcomes following a jealousy experience.

The last element of recounted jealousy stories examined in this section was the degree to which the overall story and the jealousy threat were sexual in nature. It was expected that males and individuals in romantic relationships would have stories with more sexual content than females or individuals in friendships. A very small percentage of the jealousy stories were overtly sexual in nature ( $M=0.7\%$ ) and the vast majority (80%) of jealousy threats were deemed non-sexual by coders. Contrary to expectations, no statistically significant differences by gender or relationship type were found in either of these analyses.

It is possible that sexuality plays less of a role in jealousy experiences than previously believed, and that the assumptions about the role of gender and relationship context are not correct. However, it is also important to note the limitations of the methodology employed. The text analysis program used to analyze jealousy experience stories counted specific, predefined words like “kiss”, and “horny” as sexual. Likewise, coders were instructed to consider jealousy threats sexual if they mentioned behaviors like sex, hooking up, kissing, touching, wanting, or cheating. Both of these methods overlook sexual themes that were not explicitly stated or that were stated in a less overt manner. These methods are also less sensitive to imagined sexual concerns. For example, an underlying fear may be that the valued partner would cheat on the participant, but if this had not actually happened, it would have been unlikely to have been described in the recounted jealousy experience and therefore not counted. Additionally, seemingly nonsexual terms like “hanging out” may, in fact, have a sexual connotation, but would not have been picked up by these analytic tools. Finally, social desirability may also have prompted some subjects to downplay sexuality in their open-ended responses. Still, it is notable that overt written sexual content was so rare and that expected gender differences were not found in the current study.

### **The Jealousy Target**

A major contribution of the current study to the jealousy literature is the elucidation of the identity and role of the jealousy target. Jealousy was targeted predominantly towards a single individual (74%) rather than a group of individuals, though approximately a quarter of participants reported jealousy towards groups of affiliated peers (e.g., fraternities, new roommates) or towards undifferentiated others (e.g., “other girls”). The jealousy target was most often a friend of the valued partner and far less often an ex-romantic partner or an acquaintance. This was the general pattern across participants, regardless of gender or relationship context. This

finding underscores the conceptualization of jealousy as involving a relationship triangle, with a specific third party. However, these results also point to a subset of individuals who are threatened by multiple others rather than by a specific interloper. It may be that these individuals are hypervigilant to threats and prone to experiencing anxious jealousy (also referred to in jealousy literature as “reactive jealousy”, “suspicious jealousy” or “fait accompli jealousy”). Alternately, these individuals may be accurately reading the intentions of others or of the valued partner.

The next set of analyses investigated the relationship between the individual and the jealousy target. Individuals in friendships were much more likely to know, feel close to, and have shared social circles with the jealousy target than individuals in romantic relationships, particularly those in exclusive romantic relationships. Thus, friendship jealousy is the most relationally complex form of jealousy, with overlapping ties between all members. In romantic relationship jealousy, on the other hand, the individual is more likely an onlooker to a separate relationship between the partner and the jealousy target. Interestingly, despite the embedded nature of friendship jealousy, these experiences are less jealousy-producing, on average, than romantic relationship jealousy. This provides further evidence that friendship and romantic relationship jealousy are discernably different experiences occurring in distinct contexts.

Who might experience jealousy in friendships, a context in which social norms do not dictate exclusivity? Initial analyses in the current study have already revealed that women report jealousy at higher rates than men within friendships. While same-sex friendships are salient relationships for females, it may also be that certain kinds of friendships foster jealousy more than others. Relationally aggressive children have been found to have friendships characterized by intimacy, exclusivity, high rates of jealousy and relational aggression (Grotzinger & Crick, 1996). Less is known about relational aggression among adolescents and young adults, but this same



combination of factors in emerging adult friendships would likely increase the risk for friendship jealousy. Studies of friendship jealousy in early adolescence have also linked an inflexible cognitive style to feeling jealousy and engaging in jealousy behaviors (Lavalley & Parker, 2009). Likewise, participants in the current sample who were rigid and unrealistic in their belief that only a particular other can meet the interpersonal needs of friendships may have been particularly susceptible to experiencing jealousy. Relational aggression and inflexible beliefs were not formally assessed in the current study and warrant closer inspection in future research, especially in a college student sample.

## **Jealousy Behaviors**

In the current study, the most common expressed jealousy behaviors (talking calmly to the friend or partner, avoidance, and using negative body language) were directed towards the valued partner, with few participants reporting actions taken towards the jealousy target. Even with the ubiquity of social media such as Facebook, participants reported low levels of spying/snooping/stalking/keeping tabs on either the valued partner (21%) or the jealousy target (3%). This contrasts with recent research highlighting the role of technology and social media in eliciting emotions such as jealousy, among women in particular (e.g., McAndrews & Shah, 2013; Muise, Christofides, & Desmarais, 2009; Muscanell, Guadagno, Rice, & Murphy, 2013), as well as studies among college students documenting the frequent use of sites like Facebook to keep tabs on romantic partners, friends, and acquaintances (e.g., Stern & Willis, 2007). One possible explanation for this finding is that technology such as Facebook is so common that coming across information about the valued partner or jealousy target appears without concerted efforts on the part of the individual and is therefore not considered spying, snooping, or keeping tabs on others. This preserves the possibility that these forms of technology do, in fact, elicit jealousy.

The most frequently endorsed expressed behaviors are also on the less extreme end of the continuum of possible reactions and include both direct and non-direct actions. Non-direct behaviors have the advantage of providing an outlet for negative emotions without the stigma of overt aggression (e.g., Bjorkqvist, 1994) and may be among the most preferred methods of expressing jealousy for this reason.

Across the board, individuals in exclusive romantic relationships exhibited more jealousy behaviors than individuals in friendships. Exclusive romantic partners were also more likely to be aware of the individual's jealousy experience than friends were. Mounting evidence points to exclusive romantic relationships as contexts in which participants experience and express jealousy more often and in multiple ways. These findings are consistent with the view that emotional expression is the hallmark of close relationships (Levinger & Senn, 1967) and that within these relationships it is appropriate to display both positive and negative emotions.

## **The Resolution**

A nuanced understanding of the jealousy phenomenon would not be complete without an examination of the repercussions of a jealousy incident. Overall, following the jealousy experience, participants experienced a moderate decline in how they felt about the relationship in general, as well as how committed, trusting, and satisfied they were with their friend or partner. These post-jealousy changes were experienced similarly across gender and relationship context, underscoring the overall impression of jealousy as a negative experience. However, in line with a growing literature on positive outcomes that can accompany jealousy (e.g., Milardo & Helms-Erikson, 2000), participants also reported experiencing positive effects of jealousy approximately half the time. The most frequently reported positive outcome was improving one's self. Additionally, when asked what lessons were learned from the overall jealousy experience, participants overwhelmingly described learning something about themselves. Taken together, one

particularly adaptive response to jealousy, which often involves a threat to self, is to better understand and bolster one's sense of self.

There were few relationship context differences in analyses involving the resolution of the jealousy incident. Whereas aspects of the jealousy experience and jealousy expression differed markedly according to relationships context, the sequelae of jealousy appears similar across contexts. The exception to this is the finding that romantic relationships were far less likely to have remained intact following the jealousy experience than friendships. Moreover, participants reported that jealousy was a significant contributor to the relationship dissolution. Romantic relationships, particularly non-exclusive ones, may be less stable than friendships during this developmental period. However, romantic relationships also may be especially sensitive to relationship insults in the form of jealousy. The association between jealousy and relationship dissatisfaction is well-established (Andersen, Eloy, Guerrero, & Spitzberg, 1995), but less is known about the role of jealousy in relationship termination.

### ***Jealousy Intensity***

The second aim of the study was to test hypotheses regarding factors that were associated with jealousy intensity. These factors included individual characteristics of the participants, aspects of the jealousy target, dyadic relationship characteristics, and jealousy incident variables. Each set of factors is discussed in turn.

### **Individual Characteristics**

Converging evidence supports the notion that gender is not an explanatory variable in the experience and expression of jealousy in the current sample. Counter to the hypothesis that females in friendships would report more intense jealousy than males, intensity levels were similar for males and females, even within friendship jealousy.

The next set of hypotheses examined the relationship between jealousy intensity and the way in which an individual approaches relationships, including the individual's unique relationship history and attachment style. As expected, having past impactful jealousy experiences was related to reporting more intense jealousy during the recounted jealousy experience. This suggests that past negative events may prime, rather than inoculate, one to experience future negative jealousy reactions. Another way of testing how past experiences may affect an individual's tendency to experience intense jealousy was to examine attachment style. Contrary to expectations, securely attached individuals did not experience more intense jealousy than insecurely individuals; in fact, no significant group differences emerged. It may be that recent and specific prior negative jealousy experiences play a larger role in preparing an individual up to feel strongly during subsequent jealousy incidents than more distant relational experiences. For this reason, it would be valuable for future research to examine jealousy during earlier developmental periods and especially to study how individuals make sense of such experiences.

The final individual characteristic examined was self-esteem. Low self-esteem was associated with more intense jealousy ratings, a finding also reported by many previous studies (e.g. Parker, Low, Walker, & Gamm, 2005; Salovey & Rodin, 1991). Jealousy can be instigated when features of the jealousy target lead to a negative self-comparison. It follows that a higher threshold for negative self-comparisons would be protective against feeling jealousy, and this idea is supported by the current study. Some researchers have also suggested that extremely high-self esteem may reflect unstable, tentative beliefs about the self that are particularly prone to threat and when challenged, can elicit strong emotions and reactions such as violence (e.g., Baumeister, Smart, & Boden, 1996). A more nuanced examination of the association of self-esteem and jealousy would be a rich avenue for continued research.

## **Jealousy Target Variables**

Jealousy target variables were examined in order to shed light on the third member of the jealousy triangle and as a way to learn more about the nature of the jealousy threat. Jealousy targets in exclusive and non-exclusive romantic relationship jealousy experiences were mostly romantically unattached (83%). Jealousy target romantic availability was hypothesized to be associated with more intense jealousy. A rival's romantic availability was thought to signal both types of underlying jealousy threats—a threat to self, if the jealousy target is deemed a viable relationship alternative, and a threat to the relationship, if the jealousy target could usurp the role the individual currently fills in the relationship with the partner. However, this hypothesis was not supported. Upon reflection, the current analytic strategy was not ideal to best test this hypothesis and potentially could have masked an effect. Jealousy targets from all romantic relationships jealousy experiences were analyzed together without a differentiation made between jealousy targets who were romantic rivals and those who were not. Romantic availability of the jealousy target is likely not relevant when the jealousy target is not a romantic rival and future analytic strategies should take this into account.

## **Dyadic Relationship Characteristics: Individual and Partner/Friend**

Individuals in romantic relationships did experience more intense jealousy than individuals in friendships, yet the only romantic relationship characteristic that was significantly associated with jealousy intensity was trust. Individuals who trusted their partners more felt jealousy less intensely.

Distrust is an interpersonal experience interwoven with jealousy, along with uncertainty and suspicion (Guerrero & Andersen, 1998). Trust can serve to dispel perceived threats because individuals believe their partner will consider their best interests, even in the face of incentives to

act otherwise. Trusting individuals are also likely to feel secure about their relationship in general and the ability of their relationship to overcome obstacles such as interlopers. In contrast, distrust can fan the flames of jealousy. Distrust, insecurity and rumination form a vicious cycle in which doubts and negative expectations are linked to defensive thought processes and an erosion of trust for the partner (Boon, 1994).

Higher levels of trust may also lead the individual to feel less possessive of the partner. Possessiveness is often implicated in jealousy experiences, and in the current study was cited frequently as an underlying reason for jealousy. Thus, if trust reduces possessiveness, a main motivation for jealousy is diminished. A caveat being that while a negative relationship between trust and possessiveness has been previously established (Pinto & Hollandsworth, 1984; Carson & Cupach, 2000), these studies are cross-sectional in nature so it is not possible to determine the direction of effects.

### **Dyadic Relationship Characteristics: Individual and Jealousy Target**

An exploratory analysis revealed that greater social circle overlap between the individual and the jealousy target was associated with decreased jealousy intensity ratings. Previous analyses that specifically examined relationship context may help explain this finding. Social circle overlap between the individual and the jealousy target was more common within friendship jealousy experiences. Friendship jealousy experiences were also less intense than romantic relationship experiences. Thus, it may be that the overall finding that more social circle overlap is associated with lower jealousy intensity is really driven by relationship context differences.

### **Dyadic Relationship Characteristics: Friend/Partner and Jealousy Target**

The last set of relationship variables examined were qualities of the relationship between the friend/partner and the jealousy target. Little is known about the jealousy target in general and

even less is known about how the relationship between the jealousy target and the valued partner affects an individual's jealousy experience. The variables examined (length of relationship and social circle overlap between the friend/partner and jealousy target) were chosen as proxies for the strength and depth of the relationship between the friend/partner and jealousy target. The hypothesis was that the greater the connection between these two members of the jealousy triad, the more threatening this would be to the individual, and, as a result, jealousy ratings would be higher. However, neither of these variables revealed an association with the individual's jealousy intensity rating. It could be that these variables did not best capture the quality of the relationship between the friend/partner and the jealousy target. More direct measures of closeness between these two members could yield different results. Alternately, the relationship between these two members may be less important than originally thought in the individual's perception of self or of a relationship threat.

### **Incident Variables**

The final category of variables posited to have an association with jealousy intensity were characteristics of the recounted jealousy experience. As expected, individuals whose jealousy threats were classified as having no clear basis for jealousy rated their jealousy as less intense than individuals whose jealousy threats were classified as containing some cause for concern or a clear violation. The finding that lower intensity threats lead to less intense ratings of jealousy makes sense, yet recall that jealousy threat levels were coded by outside observers while intensity ratings were made by the individuals themselves. Individuals could have felt high levels of threat, despite how coders classified these threats, and thus reported high levels of jealousy intensity. The fact that this pattern did not emerge suggests that most individuals exhibited reactive rather than anxious jealousy, responding to "real" threats rather than unfounded worries. Given the negative associations anxious jealousy has with outcomes like relationship quality

(e.g., Barelds & Dijkstra, 2006), this finding may indicate that the study sample represents psychologically healthy individuals who are responding appropriately to jealousy threats.

### ***Jealousy Frequency***

An affective state is made up of two components: intensity and frequency. The third and final aim of the current study was to promote a better understanding of what makes an individual vulnerable to experiencing jealousy. Vulnerability to jealousy was first defined as experiencing frequent jealousy in a specific relationship. The relationship of interest was the one in which the individual reported the jealousy experience.

Tests of relationship context and gender associations with jealousy frequency supported the overall notion that relationship context is consistently associated with features of jealousy among emerging adults, but that gender is not. In keeping with previous findings in the current study, exclusive romantic relationships appear to be the prime context for frequent experiences of jealousy and friendships are less evocative contexts. Rates of jealousy frequency within non-exclusive romantic relationships fall in between exclusive romantic relationships and friendships.

There is also evidence that the way in which an individual approaches relationships, which partly stems from an individual's unique relationship history, influences how frequently the individual will feel jealousy. It was posited that participants with insecure attachment styles have negative internal working models and therefore may expect, and perceive, jealousy more frequently than securely attached individuals. Despite the hypothesis that having a secure attachment style would be protective against experiencing frequent jealousy, it appears that the only robust pattern to emerge is that individuals who are anxiously attached are at greater risk for experiencing frequent jealousy than either securely attached or avoidantly attached individuals.



To more fully understand this finding, it is useful to refer to Hazan's and Shaver's original study (1987) differentiating secure, avoidant, and anxious adult attachment styles. Hazan and Shaver defined the different attachment types in the following way and these definitions were used in the current study as well: securely attached individuals found it relatively easy to get close to others and depend on them and did not often worry about being abandoned or someone getting too close. Avoidantly attached individuals were uncomfortable being close to others, trusting others, depending on others, and wanted love partners to be more intimate than they (the individuals) felt comfortable being. In contrast, anxiously attached individuals found others reluctant to get close, worried that their partner did not love them or want to be with them, and sometimes scared others away by wanting to be so close.

In Hazan's and Shaver's study, a comparison was made between the three attachment types on "love subscales", which included a four-item jealousy scale. The anxiously attached individuals had significantly higher jealousy scores than the other two attachment groups. The current study found similar results, with anxiously attached individuals showing an increased vulnerability for jealousy. Interestingly, anxiously attached individuals did not report more intense jealousy than securely or avoidantly attached individuals. It may be that one quality of anxiously attached individuals is that they are especially vigilant to jealousy threats and susceptible to feeling jealous, yet not necessarily at more intense levels than their counterparts.

As with jealousy intensity findings, individuals who report past impactful jealousy experiences report more frequent jealousy than those who, presumably, did not have negative prior experiences. This provides further evidence of the importance of more fully understanding early experiences with jealousy.

While negative prior experiences seem to predispose some individuals to recurrent experiences of jealousy, positive factors also serve a protective function. The primary protective

factor identified in the current study is higher self-esteem. Jealousy is often conceptualized as a response to a threat to the self, either through an unfavorable social comparison or an inferred rejection from a partner (Sharpsteen, 1995). Having higher self-esteem may successfully buffer against interpreting events as reflecting poorly on one's self.

The current study utilized a multi-method approach, in which the frequency of experiencing jealousy was conceptualized in more than one way. In addition to examining participants responses to a direct question about how often they experienced jealousy over the course of their relationship, frequency was also defined by the number of jealousy experiences participants reported in the current study. Participants were given the option to describe two jealousy experiences (one romantic relationship jealousy experience and one friendship jealousy experience), however few (19%) did so. A small number of respondents (6%) indicated that they had never had a jealousy experience during college. Individuals who either did not report jealousy or reported multiple experiences of jealousy in different relationships were examined further, as these individuals represented opposite ends of the jealousy continuum and could provide insight into protective and risk factors for experiencing jealousy.

### **Individuals Reporting No Jealousy**

One possible explanation for those reporting no jealousy is that these individuals have characteristics that make them “immune” from jealousy. A comparison between these individuals and those who did report at least one jealousy experience revealed no systematic differences except that individuals reporting no jealousy had fewer lifetime romantic relationships than their counterparts. It appears that opportunity factors in the romantic arena, not factors such as gender, age, attachment status, or self-esteem, play a key role in determining who does not report jealousy. However, given that the current study did not compare the two groups on an

exhaustive number of variables, it is possible that a factor with greater explanatory power exists. Future research could focus on elucidating additional protective factors.

An alternative explanation is that individuals who were less invested in participating in a study would report no jealousy in order to be done with the study sooner. This scenario was considered in the early stages of the study design and the decision was made not to include an “opt out” button for individuals who did not experience jealousy. Rather, individuals who did not experience jealousy reported this in the open-ended jealousy experience response and manually skipped through the follow-up questions. The jealousy experience question appeared after background information was collected, so individuals reporting no jealousy could be compared to other participants. Given these design elements, and the fact that many of the participants who reported no jealousy went on to explain themselves (e.g., “I am not a jealous person, I honestly cannot think of one time in college I was jealous of a friend or partner”), it seems unlikely that the “no jealousy” group was comprised of merely less invested individuals.

### **Individuals Reporting Multiple Jealousy Experiences**

Individuals who were on the opposite side of the frequency spectrum (i.e., those who reported two jealousy experiences) were also of interest. These individuals could be considered to be particularly vulnerable to jealousy, as they not only reported two jealousy experiences, but reported jealousy experiences across two types of peer relationships. As with individuals reporting no jealousy, a comparison to the “normative” sample of individuals reporting one jealousy experience was performed. The vulnerability factors that emerged were: being female, an upperclassman, and having an avoidant attachment style.

Similar to the profile of individuals who did not report jealousy, individuals who reported two experiences had increased opportunities to encounter jealousy as a function of age and year in college. Since jealousy appears to be a very common experience, it follows that older

individuals would accrue more jealousy experiences than younger individuals, especially if older individuals have denser social networks.

In contrast to individuals reporting no jealousy, one of the only significant gender differences in the current study was found among individuals reporting two jealousy stories. More females reported multiple jealousy experiences than males. Perhaps females have deeper investments in both romantic and platonic friendships, thus putting them at greater risk for experiencing jealousy across relationships. The possibility remains that the gender difference found does not reflect underlying differences in experiencing multiple jealousy situations, but rather the likelihood of reporting it. Filling out a second jealousy experience significantly increased the length of the survey and it could be that females were more likely to write more than males, a finding other researchers have reported as well (e.g., Pomplun & Capps, 1999).

Attachment style impacts vulnerability to jealousy in both ways jealousy frequency is defined. When it is defined as reporting multiple jealousy experiences, more avoidantly attached individuals report frequent jealousy than expected, but, interestingly, this is not true for anxiously attached individuals. This is opposite from the finding that anxiously attached individuals report more frequent jealousy during the course of the relationship they described in the reported jealousy experience. This raises the question of whether the way jealousy frequency is defined determines which individuals are considered most vulnerable. Defining jealousy frequency as experiencing jealousy across multiple relationships is perhaps a more sensitive measure of vulnerability. These individuals are experiencing jealousy across different situations with different involved parties, whereas it is possible that individuals who experience many incidents of jealousy within a single relationship are merely repeatedly responding to one trigger. According to Hazan's and Shaver's (1987) classification, avoidantly attached individuals specifically experience trust issues. It may be chronic lack of trust underlies the experience of

frequent jealousy across settings. In contrast, a defining feature of the anxious attachment style is “worry that my partner doesn’t really love me or won’t want to stay with me” (p.513). This may better describe individuals who frequently feel jealousy in only one context, likely within romantic relationships.

## ***Summary***

The results of the present study underscore the normative nature of jealousy within close peer relationships during college. As a common experience with potentially detrimental individual and relationship effects, the current study provides much needed groundwork for better understanding the phenomenon of jealousy by examining actual jealousy experiences. Results provide clear and consistent evidence that characteristics of the jealousy experience vary significantly according to whether the jealousy occurs within a friendship or romantic relationship. Thus, relationship context is an extremely important factor to consider when describing and studying jealousy.

## ***Study Limitations and Future Directions***

The present study has the potential to contribute to the field in numerous ways, yet several limitations should be acknowledged. First, care should be taken when generalizing the results. The current study was designed to sample the college student population at Duke University in a representative way, with inclusion of equal numbers of males and females spanning each year in college, and including a significant proportion of participants who reported ethnic minority status. However, Duke University students are not necessarily representative of emerging adults as a whole. Even the concept of emerging adulthood does not apply to all young adults universally, but rather refers to a specific developmental period that is only present in cultures that postpone entry into adult roles and responsibilities well past the teenage years

(Arnett, 2000). Thus, there may be important differences between the current sample and youth who do not have the luxury of an extended adolescence, such as those who enter the workforce rather than attend college. Even among college students, aspects of the social environment, such as geographic location, residential versus commuter status, and campus-wide social norms may significantly influence jealousy experience and expression. A related issue is that the phenomenon of jealousy may differ among ethnic, cultural, and sexual minority groups. The current study does not examine this possibility, nor do any known jealousy studies with an adolescent or young adult sample. A few adult studies suggest that sexual orientation may influence gender differences with regards to what situational factors elicit jealousy (e.g., Harris, 2002), but there is clearly a need for more research in this area.

Another limitation of the current study is the reliance on retrospective reporting. The decision to ask participants to recall a jealousy experience during the college years rather than using hypothetical vignettes or eliciting jealousy in the laboratory was made because the goal of the study was to explore qualities of impactful real-life experiences. To aid participants in accessing the emotions and cognitions felt during that incident, they were asked to write an account of their jealousy experience. However, remembering and answering fine-grained question about an experience that could have happened up to four years prior likely introduced recall bias. Retrospective methodology has been found to be particularly problematic when reporting on psychological variables, such as subjective psychological states (Henry, Moffitt, Caspi, Langley, & Silva, 1994). Further, intervening events such as break-ups or friendship dissolutions could have colored participant responses. A fruitful area of future research would be to study jealousy in real time, such as how jealousy is experienced and managed at a microanalytic level within the context of a relationship. One way to accomplish this could be to

bring dyadic pairs into the lab. Researchers could either ask the dyad to discuss a jealousy issue or attempt to experimentally induce jealousy.

A major goal of the current study was to better understand the phenomenon of jealousy, which is, by definition, a triadic relational experience. Yet only one member of the jealousy triangle was assessed. While individuals are the best reporters of their own internal experiences, the absence of other members' perspectives on the jealousy experience leaves vital pieces missing from the overall picture. Interesting work has been conducted examining how network ties within a social group like sororities relate to problematic behavior (e.g., Paxton, Schutz, Wertheim, & Muir, 1999). Perhaps similar methodologies would be useful for investigating how the interactions of all members of the jealousy triangle are related to the experience or expression of jealousy. This could be especially suitable for studying friendship jealousy, as current findings reveal that within this relationship context, members tend to have overlapping social circles.

The design of the current study allowed for a broad examination of the relationship between many variables and jealousy, but prevented any causal claims from being made. Crucial information about how jealousy unfolds could be gained from alternate study designs. For example, longitudinal designs like the one used to examine a transactional model of excessive reassurance seeking, depression, and peer relationships (Prinstein, Borelli, Cheah, Simon, & Aikins, 2005) could shed light on the sequence of events that comprise a jealousy experience and the influence of important contextual factors.

Lastly, the current study is limited in its ability to describe jealousy effects. Only a handful of outcomes were explored, and these were limited in scope. Jealousy at extreme levels has been tied to more serious outcomes like relationship violence. Even at non-extreme levels, it is possible that jealousy affects facets of emerging adults' well-being and adjustment. Examining the effect of jealousy on emerging adults' academic, psychological, and behavioral adjustment

would be a fertile area for future research. This information could inform prevention and intervention efforts aimed at reducing the frequency and the negative effects of jealousy.



## Appendix A

### List of Measures and Full Study Measures

Measure	Authors
1. Demographic Questionnaire	Created for this study
2. Relationship Convoys (current)	Kahn & Antonucci, 1980
3. Relationship Convoys (future)	Kahn & Antonucci, 1980
4. Adult Attachment Questionnaire	Hazan & Shaver, 1990
5. Mother/Father/Peer Scale	Epstein, 1983
6. Rosenberg Self-Esteem Scale	Rosenberg, 1965
7. Self-Perception Profile for College Students	Neeman & Harter, 1986
8. Jealousy Experiences Questionnaire	Created for this study
9. Positive Peer Experiences Questionnaire	Created for this study

## Demographic Information

1. Sex:
  1. Male
  2. Female
2. Age (Please answer in years): \_\_\_\_\_
3. Current year in college:
  1. Freshman
  2. Sophomore
  3. Junior
  4. Senior
4. How would you describe yourself (please select all that apply):
  1. African American, Black
  2. Asian, Asian-American
  3. Caucasian/White
  4. Hispanic/Latino
  5. Other
5. Would you consider yourself a religious person?
  1. Yes
  2. No
6. Please select the highest level of education completed by your mother and father:  
  
Mother:
  1. no high school diploma
  2. high school diploma or equivalent
  3. associate or two-year degree
  4. bachelor's or four year degree
  5. some graduate or professional school
  6. graduate degree (MA, MBA, MS, PhD, MD, etc)  
Father:
  1. no high school diploma
  2. high school diploma or equivalent
  3. associate or two-year degree
  4. bachelor's or four year degree
  5. some graduate or professional school
  6. graduate degree (MA, MBA, MS, PhD, MD, etc)
7. Please describe your mother's and father's occupations:

Mother:  
Occupation: \_\_\_\_\_  
Job Title: \_\_\_\_\_  
Father:  
Occupation: \_\_\_\_\_  
Job Title: \_\_\_\_\_

8. What is your parents' current marital status?
1. Married
  2. Divorced/Separated
  3. Never Married
  4. Widowed
  5. Other (please specify) \_\_\_\_\_

9. What is your sexual orientation?
1. Heterosexual
  2. Homosexual
  3. Bisexual
  4. Transgender
  5. Other (please specify) \_\_\_\_\_

10. What category does your current GPA fall into?
1. 0-2.9
  2. 3.0-3.6
  3. 3.7-4.0

11. What is the highest degree that you plan to earn? (check one)
1. Bachelor's degree
  2. Master's degree (MA, MS, MFA, MBA)
  3. Law degree, Medical degree (MD, DVM, DDS), or Doctorate (PhD, PsyD, Ed.D.)

12. All together, how many exclusive romantic partners have you had in your lifetime? By exclusive romantic partners, we mean a relationship lasting **3 months or longer**, and in which you were **not romantically involved with other people**.

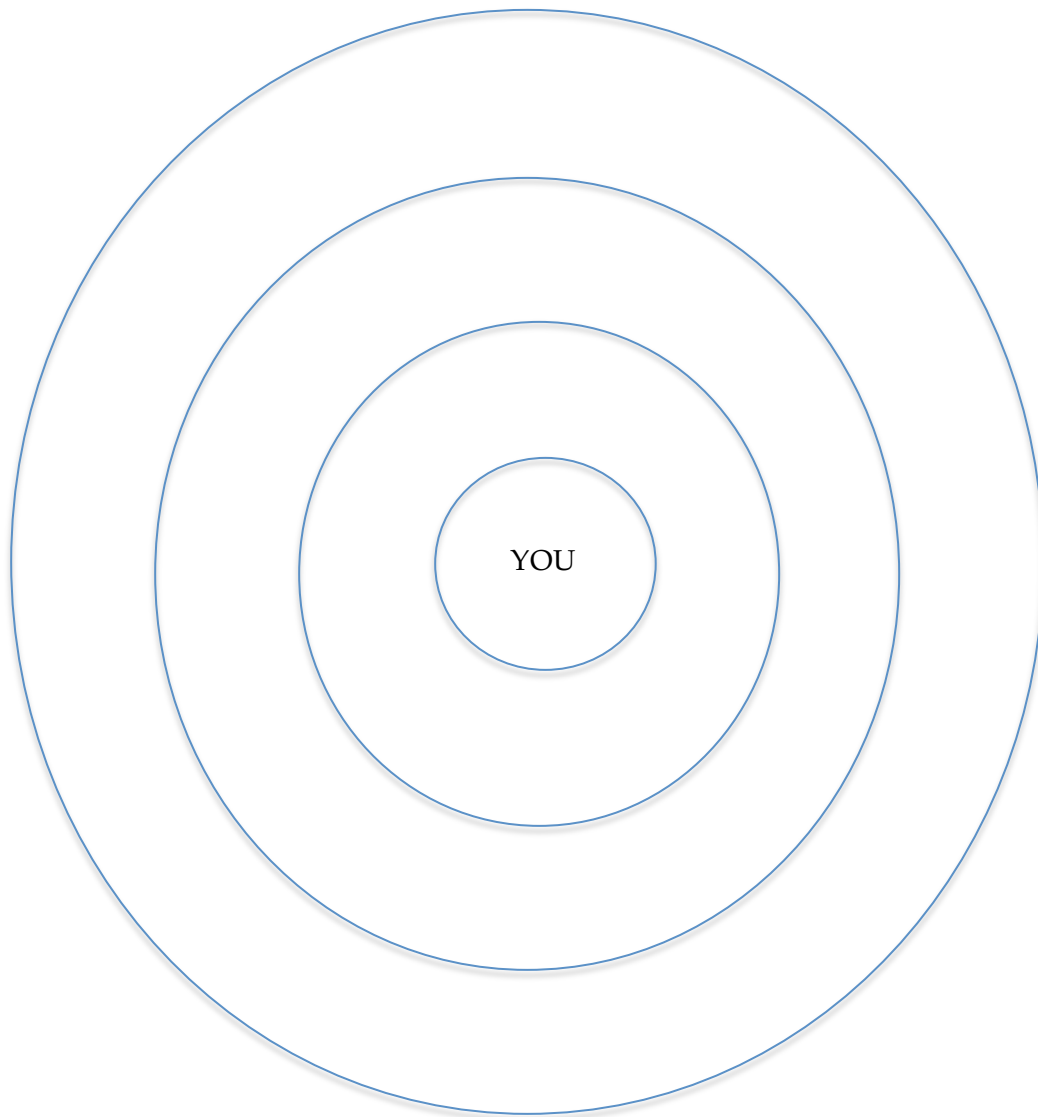
13. How old were you at the age of your first exclusive romantic partner? Please respond in years.

14. Are you currently in an exclusive romantic partnership?
1. Yes
  2. No

### Relationship Convoys (Kahn & Antonucci, 1980)

*An integral part of one's social life is the network of people that one turns to in times of need and whom ones shares things with in times of happiness. We are interested in learning who these people are in your life.*

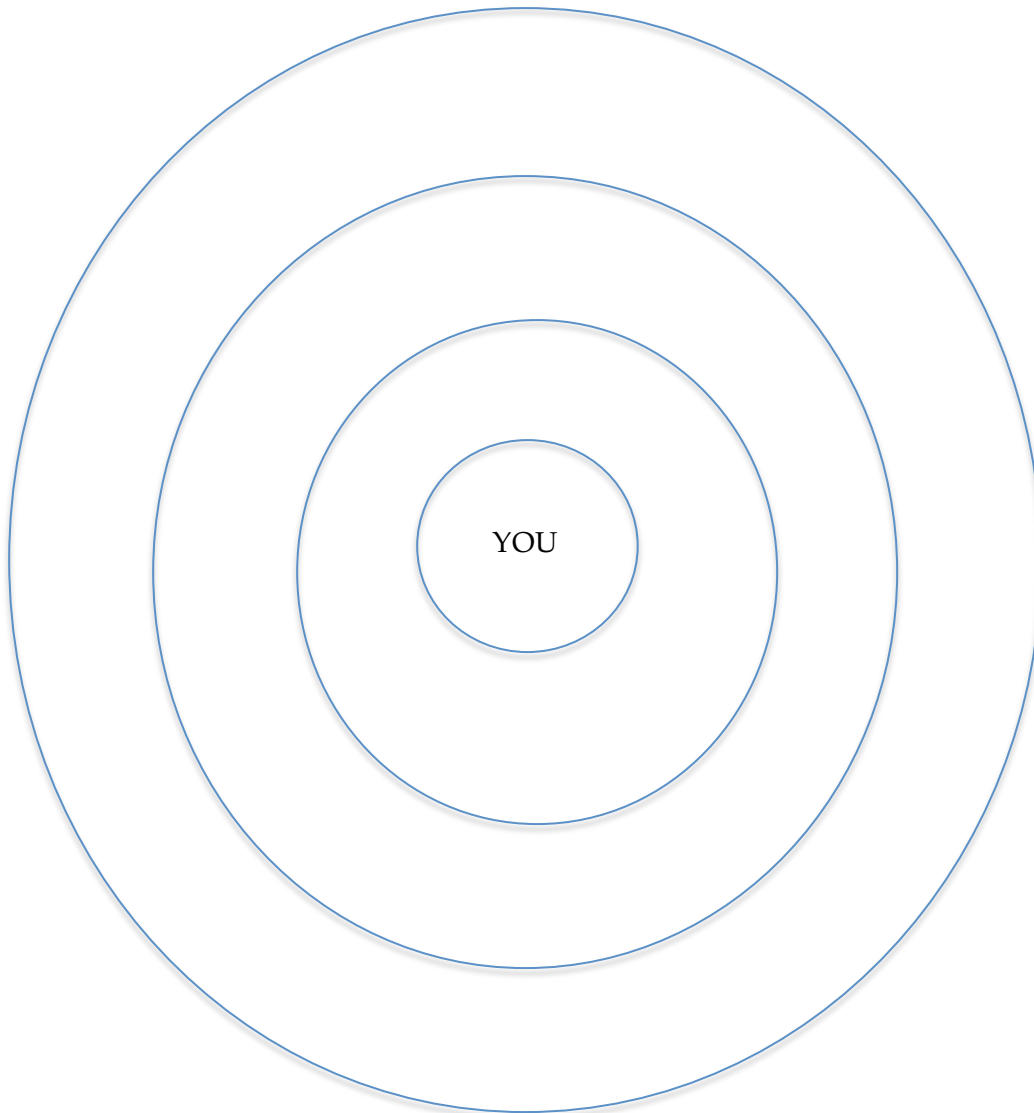
*On the following diagram, please label people who are important to you NOW and whom you receive social support from. The closer you feel to a person, the closer he or she should fall to "you" (the circle in the middle). For each person you include, please label them with initials (ex- "L.M.") AND indicate their relationship to you (ex- "same-sex friend", "brother", etc)*



### Relationship Convoys (Kahn & Antonucci, 1980)

*Over time, the network of people one turns to in times of need and whom ones shares things with in times of happiness change. We are interested in who you think these people will be in the future.*

*In the following diagram, please label people who you think will be important to you and whom you will receive social support from in **FIVE YEARS FROM NOW**. The closer you think you will feel to a person, the closer he or she should fall to “you” (the circle in the middle). For each person you include, please label them with initials (ex- “L.M.”) AND indicate their relationship to you (ex- “same-sex friend”, “brother”, etc).*



**Adult Attachment Questionnaire – (Hazan & Shaver, 1990)**

*These questions are concerned with your experiences in adult relationships. Take a moment to think about these experiences and answer the following questions with them in mind.*

*Read each of the three self-descriptions below (A, B, and C) and then select the one description that best describes how you feel in adult relationships, or is nearest to the way you feel (Note: the terms “close” and “intimate” refer to psychological or emotional closeness, not necessarily sexual intimacy.)*

\_\_\_\_\_ A. I find it relatively easy to get close to others and I am comfortable depending on them. I don't often worry about being abandoned or about someone getting too close to me.

\_\_\_\_\_ B. I am somewhat uncomfortable being close to others; I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being.

\_\_\_\_\_ C. I find that others are reluctant to get as close as I would like. I often worry that my partner doesn't really love me or won't want to stay with me. I want to get very close to my partner, and this sometimes scares people away.

*Now please rate each of the relationship styles above to indicate how well or poorly each description corresponds to your general relationship style.*

			<i>Style A</i>			
1	2	3	4	5	6	7
Disagree			Neutral/			Agree
Strongly			Mixed			Strongly

			<i>Style B</i>			
1	2	3	4	5	6	7
Disagree			Neutral/			Agree
Strongly			Mixed			Strongly

			<i>Style C</i>			
1	2	3	4	5	6	7
Disagree			Neutral/			Agree
Strongly			Mixed			Strongly

### Mother/Father/Peer Scale (Epstein, 1983)

The following set of questions asks about your **childhood** relationships. Please read each of the following statements and indicate the ONE number that tells how strongly you agree or disagree that each statement describes your childhood relationship with the people indicated.

Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1	2	3	4	5

**When I was a child, my mother (or mother figure)...**

1. Encouraged me to make my own decisions.
2. Helped me learn to be independent.
3. Felt she/he had to fight my battles for me when I had a disagreement with a teacher or friend.
4. Was close to a perfect parent.
5. Was over protective of me.
6. Encouraged me to do things for myself.
7. Encouraged me to try things my way.
8. Had not a single fault I can think of.
9. Did not let me do things that other kids my age were allowed to do.
10. Sometimes disapproved of specific things I did, but never gave me the impression that she/he disliked me as a person.
11. Enjoyed being with me.
12. Was an ideal person in every way.
13. Was someone I found very difficult to please.
14. Usually supported me when I wanted to do new and exciting things.
15. Worried too much that I would hurt myself or get sick.
16. Was never angry with me.
17. Was often rude to me.
18. Rarely did things with me.
19. Didn't like to have me around the house.
20. And I never disagreed.
21. Would often do things for me that I could do for myself.
22. Let me handle my own money.
23. Could always be depended upon when I really needed her/his help and trust.
24. Gave me the best upbringing anyone could ever have.
25. Did not want me to grow up.
26. Tried to make me feel better when I was unhappy.
27. Encouraged me to express my own opinion.
28. Never disappointed me.
29. Made me feel that I was a burden to her/him.
30. Gave me the feeling that she/he liked me as I was; she/he didn't feel she/he had to make me over into someone else.

**When I was a child, my father (or father figure)...**

1. Encouraged me to make my own decisions.
2. Helped me learn to be independent.
3. Felt she/he had to fight my battles for me when I had a disagreement with a teacher or friend.
4. Was close to a perfect parent.
5. Was over protective of me.
6. Encouraged me to do things for myself.
7. Encouraged me to try things my way.
8. Had not a single fault I can think of.
9. Did not let me do things that other kids my age were allowed to do.
10. Sometimes disapproved of specific things I did, but never gave me the impression that she/he disliked me as a person.
11. Enjoyed being with me.
12. Was an ideal person in every way.
13. Was someone I found very difficult to please.
14. Usually supported me when I wanted to do new and exciting things.
15. Worried too much that I would hurt myself or get sick.
16. Was never angry with me.
17. Was often rude to me.
18. Rarely did things with me.
19. Didn't like to have me around the house.
20. And I never disagreed.
21. Would often do things for me that I could do for myself.
22. Let me handle my own money.
23. Could always be depended upon when I really needed her/his help and trust.
24. Gave me the best upbringing anyone could ever have.
25. Did not want me to grow up.
26. Tried to make me feel better when I was unhappy.
27. Encouraged me to express my own opinion.
28. Never disappointed me.
29. Made me feel that I was a burden to her/him.
30. Gave me the feeling that she/he liked me as I was; she/he didn't feel she/he had to make me over into someone else.



**When I was a child, other children...**

1. Liked to play with me.
2. Were always criticizing me.
3. Often shared things with me.
4. Often picked on me and teased me.
5. Were usually friendly with me.
6. Would usually stick up for me.
7. Liked to ask me to go along with them.
8. Wouldn't listen when I tried to say something.
9. Were often unfair to me.
10. Would often try to hurt my feelings.

### Rosenberg Self-Esteem Scale (Rosenberg, 1965)

*Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.*

- |   |    |   |   |    |
|---|----|---|---|----|
| 1. On the whole, I am satisfied with myself.                                  | SA | A | D | SD |
| 2. At times, I think I am no good at all.                                     | SA | A | D | SD |
| 3. I feel that I have a number of good qualities.                             | SA | A | D | SD |
| 4. I am able to do things as well as most other people.                       | SA | A | D | SD |
| 5. I feel I do not have much to be proud of.                                  | SA | A | D | SD |
| 6. I certainly feel useless at times.   | SA | A | D | SD |
| 7. I feel that I'm a person of worth, at least on an equal plane with others. | SA | A | D | SD |
| 8. I wish I could have more respect for myself.                               | SA | A | D | SD |
| 9. All in all, I am inclined to feel that I am a failure.                     | SA | A | D | SD |
| 10. I take a positive attitude toward myself.                                 | SA | A | D | SD |

### Self-Perception Profile for College Students (Neemann & Harter, 1986)

*We are interested in what you are like as a person. This profile contains statements which allow you to describe yourself. This is NOT a test. There are no right or wrong answers. Since students are very different from one another, each individual will be marking something different.*

For each question, you first decide is whether you are more like the students on the left side or the right side. Then think about whether the statement is *sort of true* for you or *really true*.

For each statement, check only one box.

		Really True for Me	Sort of True for Me	Sort of True for Me	Really True for Me
		Some students like this kind of person they are	BUT	Other students wish that they were different	
		Some students feel confident that they are mastering their coursework	BUT	Other students do not feel so confident	
		Some students are not satisfied with their social skills	BUT	Other students think their social skills are just fine	
		Some students are not happy with the way they look	BUT	Other students are happy with the way they look	
		Some students get kind of lonely because they don't really have a close friend to share things with	BUT	Other student don't usually get too lonely because they do have a close friend to share things with	
		Some students feel like they are just as smart or smarter than other students	BUT	Other student wonder if they are as smart	
		Some students often question the morality of their behavior	BUT	Other students feel their behavior is usually moral	
		Some students feel that people they like romantically will be attracted to them	BUT	Other students worry about whether people they like romantically will be attracted to them	
		When some students do something sort of stupid that later appears very funny, they find it hard to laugh at themselves	BUT	When other students do something sort of stupid that later appears very funny, they can easily laugh at themselves	
		Some students feel they are just as creative or even more creative than other students	BUT	Other students wonder if they are as creative	
		Some students feel they could do well at just about any new athletic activity they haven't tried before	BUT	Other students are afraid they might not do well at athletic activities they haven't ever tried	
		Some students are often		Other students are usually	

		disappointed with themselves	BUT	quite pleased with themselves		
		Some students do very well at their studies	BUT	Other students don't do very well at their studies		
		Some students find it hard to make new friends	BUT	Other students are able to make new friends easily		
		Some students are happy with their height and weight	BUT	Other students wish their height and weight was different		
		Some students are able to make close friends they can really trust	BUT	Other students find it hard to make close friends they can really trust		
		Some students do not feel they are very mentally able	BUT	Other students feel that they are very mentally able		
		Some students usually do what is morally right	BUT	Other students sometimes don't do what they know is morally right		
		Some students find it hard to establish romantic relationships	BUT	Other students don't have difficulty establishing romantic relationships		
		Some students mind being kidded by their friends	BUT	Other students are bothered when friends kid them		
		Some students worry that they are not as creative or inventive as other people	BUT	Other students feel they are very creative and inventive		
		Some students don't feel they are very athletic	BUT	Other students do feel they are athletic		
		Some students usually like themselves as a person	BUT	Other students often don't like themselves as a person		
		Some students have trouble figuring out homework assignments	BUT	Other students rarely have trouble with their homework assignments		
		Some students like the way they interact with other people	BUT	Other students wish their interactions with other people were different		
		Some students wish their body was different	BUT	Other students like their body the way it is		
		Some students don't have a close friend they can share their personal thoughts and feelings with	BUT	Other students do have a friend who is close enough for them to share thoughts that are really personal		
		Some students feel they are just as bright or brighter than most people	BUT	Other students wonder if they are as bright		
		Some students would like to be a better person morally	BUT	Other students think they are quite moral		
		Some students have the ability to develop romantic relationships	BUT	Other students do not find it easy to develop romantic relationships		
		Some students have a hard time laughing at the ridiculous	BUT	Other students find it easy to laugh at themselves		

		or silly things they do				
		Some students do not feel that they are very inventive	BUT	Other students feel that they are very inventive		
		Some students feel they are better than others at sports	BUT	Other students don't feel they can play as well		
		Some students really like the way they are leading their lives	BUT	Other students often don't like the way they are leading their lives		
		Some students sometimes do not feel intellectually competent at their studies	BUT	Other students usually do feel intellectually competent at their studies		
		Some students feel that they are socially accepted by many people	BUT	Other students wish more people accepted them		
		Some students like their physical appearance the way it is	BUT	Other students do not like their physical appearance		
		Some students are able to make really close friends	BUT	Other students find it hard to make really close friends		
		Some students would really rather be different	BUT	Other students are very happy being the way they are		
		Some students question whether they are very intelligent	BUT	Other students feel they are intelligent		
		Some students live up to their own moral standards	BUT	Other students have trouble living up to their moral standards		
		Some students worry that when they like someone romantically, that person won't like them back	BUT	Other students feel that when they are romantically interested in someone, that person will like them back		
		Some students can really laugh at certain things they do	BUT	Other students have a hard time laughing at themselves		
		Some students feel they have a lot of original ideas	BUT	Other students question whether their ideas are very original		
		Some students don't do well at activities requiring physical skill	BUT	Other students are good at activities requiring physical skill		
		Some students are often dissatisfied with themselves	BUT	Other students are usually satisfied with themselves		

**Jealousy Experiences Questionnaire**  
(created for this study)

*This portion of the study will ask you to write about experiences you've had while you've been at Duke. After each initial response, you will be asked a series of follow-up questions. Just a reminder-- all responses will be kept confidential, including any names you may choose to include.*

*1. Think of a time while you've been at Duke that you were jealous in a close relationship. This could be a romantic relationship, a same-sex friendship, or a cross-sex friendship. By jealousy, we mean a negative reaction to your partner/friend's **interest in, or relationship with, another person**. Jealousy does **NOT** include being envious, or wanting what another person has. Remember, this experience needs to have occurred during college.*

*Please briefly describe this jealousy experience in the space below.*

*The following questions will ask for more information related to the experience you have described. Please answer the questions below as completely as possible, even if your description covers similar information.*

The type of relationship described above can best be described as a: (*Depending on answer, the next series of questions will be tailored to reflect romantic relationship follow-up questions or friendship follow-up questions.*)

- Romantic Relationship
- Same-sex Friendship
- Cross-sex Friendship

At the time of the jealousy incident, was this romantic relationship exclusive?

- Yes
- No

The romantic relationship described above is with a: (*sexual orientation, also so Qualtrics can use the pronoun "he" or "she"*)

- Male
- Female

What is the sexual orientation of your partner?

- Heterosexual
- Homosexual
- Bisexual
- Other (please specify)

How long ago did this jealousy incident occur?

At the time of the jealousy incident, how long had you been in your romantic relationship?  
Please answer in years and months. (*newness of relationship*)

How did you become aware of the jealousy incident you described? (*openness vs. hidden- may affect certainty, trust, in partner and/or relationship*)

- It happened while I was present
- My partner told me about it, unprompted
- My partner told me about it, after I asked
- I heard about it through a friend
- I heard about it through an acquaintance
- I discovered it accidentally
- I discovered it after checking up on my partner
- Other (specify) \_\_\_\_\_

What emotions did you feel during the jealousy incident? Please describe all the emotions you had during this time.

During the jealousy incident, how intense were your feelings of jealousy? (*level of felt jealousy*)

- |              |                   |              |                      |                 |
|--------------|-------------------|--------------|----------------------|-----------------|
| 1            | 2                 | 3            | 4                    | 5               |
| Very<br>Mild | Somewh<br>at mild | Moderat<br>e | Somewh<br>at intense | Very<br>intense |

Now, please tell us, at the time of the jealousy incident, how **much** of each of the following emotions did you feel?

- Anger:
- |      |        |      |                         |       |
|------|--------|------|-------------------------|-------|
| 1    | 2      | 3    | 4                       | 5     |
| None | Little | Some | A<br>Moderate<br>Amount | A Lot |

- Sadness:
- |      |        |      |                         |       |
|------|--------|------|-------------------------|-------|
| 1    | 2      | 3    | 4                       | 5     |
| None | Little | Some | A<br>Moderate<br>Amount | A Lot |

Fear:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate	
			Amount	

Embarrassment:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate	
			Amount	

What were you thinking at the time you learned of the jealousy incident? Please describe all the thoughts you had during this time.

What led to the jealousy incident occurring?

How much **responsibility** do you think the following people had in **causing** the jealousy incident to occur? (*Attributions- causality, control, intent*)

Your partner:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate	
			Amount	

You:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate	
			Amount	

The person you were jealousy of (the jealousy target):

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate	
			Amount	

How much **control** over the situation did the following people have during the jealousy incident?

Your partner:

1	2	3	4	5
None	Little	Some	A	A Lot



			Moderate Amount	
You:	1	2	3	4
	None	Little	Some	A
			Moderate Amount	5 A Lot
The person you were jealous of (the jealousy target):	1	2	3	4
	None	Little	Some	A
			Moderate Amount	5 A Lot

How much **intention** of causing jealousy do you think the following people had in participating in the jealousy incident?

Your partner:	1	2	3	4
	None	Little	Some	A
			Moderate Amount	5 A Lot
The person you were jealous of (the jealousy target):	1	2	3	4
	None	Little	Some	A
			Moderate Amount	5 A Lot

Was there anything you could have done to have prevented and/or stopped the incident from happening?

- Yes
- No

Please describe why you could or could not have prevented and/or stopped this incident.

Did your partner do anything that violated the “rules” of your relationship?

- Yes
- No

If yes, what did your partner do?

If no, why wasn't this a violation?

What was it about this incident that bothered you the most?

How did you handle the situation?

How did you feel about how you handled the situation?

Please check all behaviors that you engaged in. (*type of jealousy expression*)

**Action**

- Calmly talked with my partner about my feelings
- Verbally confronted my partner in an aggressive way
- Physically threatened or harmed my partner
- Showed my negative feelings through body language
- Tried to “get back” at my partner by making him/her feel guilty or jealous
- Spied, snooped, or kept tabs my partner
- Avoided/decreased communication
- Threatened to end the relationship
- Ended the relationship
- Increased affection towards my partner
- Calmly talked to jealousy target about my feelings
- Aggressively confronted jealousy target
- Spied, snooped, or kept tabs on the jealousy target
- Other (specify)
- None

Please indicate which of these behaviors is your most characteristic response to jealousy.

**Action**

- Calmly talked with my partner about my feelings
- Verbally confronted my partner in an aggressive way
- Physically threatened or harmed my partner
- Showed my negative feelings through body language
- Tried to “get back” at my partner by making him/her feel guilty or jealous

- Spied, snooped, or kept tabs my partner
- Avoided/decreased communication
- Threatened to end the relationship
- Ended the relationship
- Increased affection towards my partner
- Calmly talked to jealousy target about my feelings
- Aggressively confronted jealousy target
- Spied, snooped, or kept tabs on the jealousy target
- Other
- Do nothing

Did you confide in anyone other than your partner about the jealousy incident? (*jealousy expression/support seeking*)

- Yes
- No

If yes, who? Check all that apply and indicate how many people within these categories you confided in.

Family member 1	2	3	4 or more
Same-sex friend1	2	3	4 or more
Cross-sex friend	1	2	3 4 or more
Acquaintance	1	2	3 4 or more
Co-worker	1	2	3 4 or more
Other (specify) _____			

Why or why not?

Did your partner know you were jealous? (*jealousy expression*)

- Yes
- No

If no:

Why not? (*norms regarding appropriateness of jealousy expression*)

If yes:

How did your partner know you were jealous?

What did your partner do in response to learning you were jealous? (If responded yes to “did your partner know you were jealous?”)

Please check all behaviors that your partner engaged in in response to learning you were jealous.  
(*actual response to jealousy expression*)

**Action Yes/No**

Provided comfort/reassurance

Apologized or promised to change behavior

Expressed negative feelings (ex-sadness, anger, upset, defensiveness)

Reacted violently towards you

Ignored or became distant

Threatened to end the relationship

Ended the relationship

Was violent towards objects

Other (specify)

Did nothing

Is there anything you wish your partner had done in response to learning that you were jealous that he/she did not do? (*ideal response to jealousy expression*)

Yes

No

If yes, what?

What, if any, was the resolution to the jealousy incident?

After the jealousy incident, how would you characterize how you felt about the relationship with your partner? (*relationship adjustment*)

1	2	3	4	5
Much More Negative	Somewhat More Negative	The Same as Before	Somewhat More Positive	Much More Positive

Please write why you would characterize your relationship this way following the jealousy experience.

After the jealousy incident, was there any change in your level of commitment to your partner?  
(*relationship adjustment*)

1	2	3	4	5
Much Less Committed	Somewhat Less Committed	The Same as Before	Somewhat More Committed	Much More Committed

After the jealousy incident, was there any change in your level of trust in your partner?  
(*relationship adjustment*)

1	2	3	4	5
Much Less Trusting	Somewhat Less Trusting	The Same as Before	Somewhat More Trusting	Much More Trusting

After the jealousy incident, was there any change in your level of satisfaction with your relationship with your partner? (*relationship adjustment*)

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

Are you still in the romantic relationship described in this jealousy experience? (*romantic relationship status*)

Yes  
No

If yes- How long have you been in this relationship? Please answer in years and months.  
(*relationship length*)

If no- How long did this relationship last? Please answer in years and months.  
(*relationship length*)

If not, how much did jealousy contribute to the ending of this relationship? (*is relationship status related to jealousy*)

1	2	3	4	5
Not At All	A Little	Some	A Good Deal	A Lot

Did anything positive result from this jealousy incident?

Yes  
No

If yes, what?

Please indicate if any of the following positive outcomes occurred. Check all that apply.

**Action**

**es**

- Enhanced communication with partner
- You reached out to others/developed interest in others (besides partner)
- You tried to improve yourself
- You showed your partner how much he/she meant to you
- You renegotiated the “rules” or expectations of your relationship
- Other (specify)

If something like this happened again, would you handle it in the same way?

- Yes
- No

If no, what would you do differently?

How confident do you feel that you could effectively handle other incidents like this in the future?

- |            |          |      |             |       |
|------------|----------|------|-------------|-------|
| 1          | 2        | 3    | 4           | 5     |
| Not At All | A Little | Some | A Good Deal | A Lot |

Overall, what did you take away from this experience? What were the lessons learned?

How do you think this jealousy incident has affected your approach to future relationships?

How much do you think your past jealousy experiences have impacted how you approach current or future relationships or close friendships? (*relationship history- past jealousy experiences*)

- |      |        |      |      |      |
|------|--------|------|------|------|
| 1    | 2      | 3    | 4    | 5    |
| None | Little | Some | Much | Very |

Much

Over the course of your relationship, had anything like this jealousy incident happened before?

Yes

No

If yes, please briefly describe what happened.

Over the course of your relationship, had anything like this jealousy incident happened after?

Yes

No

If yes, please briefly describe what happened.

Overall, how **intense** were your feelings of jealousy during this relationship? (*level of felt jealousy*)

1	2	3	4	5
Very Mild	Somewhat mild	Moderate	Somewhat intense	Very intense

Generally, among all your close relationships, how **intense** are your feelings of jealousy?

1	2	3	4	5
Very Mild	Somewhat mild	Moderate	Somewhat intense	Very intense

Overall, how **frequently** did you feel jealousy in this relationship? (*frequency of jealousy in relationship*)

1	2	3	4	5
Never	Seldom	Sometimes	Often	Very Often

Generally, among all your close relationships, how **frequently** do you experience jealousy?

1	2	3	4	5
Never	Seldom	Sometimes	Often	Very Often

The following section includes follow-up questions about the **individuals** involved in the jealousy incident.

### Questions About Romantic Partner

What is the sexual orientation of your partner? (*interloper's potential as romantic/sexual threat*)

Heterosexual

Homosexual

Bisexual

Other (specify) \_\_\_\_\_

Did you include this partner in the concentric circle representation of **current important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

Yes

No

If yes, what circle did this partner fall in?

Closest

Second closest

Third closest

Fourth closest

Did you include this partner in the concentric circle representation of **future important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

Yes

No

If yes, what circle did this partner fall in?

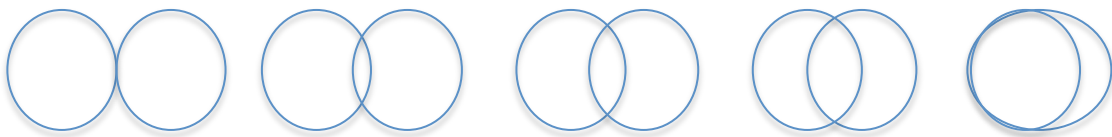
Closest

Second closest

Third closest

Fourth closest

At the time of the jealousy incident, please indicate the amount of overlap between **your** social circle and **your partner's** social circle. (*relationship embeddedness with partner*)



At the time of the jealousy incident, were you in a long-distance relationship with your partner (meaning it would be very difficult or impossible to see your partner every day)? (*type of romantic relationship- long distance vs. geographically close*)

Yes

No



At the time of the jealousy incident, how much did your partner tell you about the activities he/she participated in and the people he/she interacted with while apart from you? (*openness/transparency*)

1	2	3	4	5
Not Very Much	A Little	Some	Quite a Bit	Everythi ng

At the time of the jealousy incident, how committed was your partner to you? (*commitment-partner*)

1	2	3	4	5
Not At All	A Little	Somewh at	Mostly	Comple ely

At the time of the jealousy incident, if your partner had been single, how easy would it have been for him or her to have attracted another romantic partner? (*relationship alternatives*)

1	2	3	4	5
Very difficult	Somewh at difficult	Neither easy nor difficult	Somewh at easy	Very easy

Overall, how intense were *your partner's* feelings of jealousy during this relationship? (*partner's level of felt jealousy*)

1	2	3	4	5
Not At All/Very Mild	Somewh at mild	Moderat e	Somewh at intense	Very intense

Overall, who felt more intense jealousy in this relationship? (*level of match of felt jealousy*)

1	2	3	4	5
Exclusiv ely my partner	More my partner than me	Partner and self equally	More me than my partner	Exclusiv ely me

Overall, how *frequently* did your partner feel jealousy in this relationship? (*partner level of jealousy frequency*)

1	2	3	4	5
Never	Seldom	Sometim es	Often	Very Often

Overall, who felt more *frequent* jealousy in this relationship? (*level of match of jealousy frequency*)

1	2	3	4	5
---	---	---	---	---

Exclusiv  
ely my partner

More my  
partner than me

Partner  
and self equally

More me  
than my partner

Exclusiv  
ely me

During this relationship, did you know when your partner was jealous? (*openness of jealousy experience/expression*)

Yes  
No  
Sometimes

How did your partner typically express jealousy in this relationship? Check all that apply.  
(*Level of experienced jealousy and type of match between partner and self; expression of jealousy*)

**Action**

es

Showed his/her negative feelings through body language  
Calmly talked with me about his/her feelings  
Verbally confronted me in an aggressive way  
Physically threatened or harmed me  
Avoided me/decreased communication  
Threatened to end the relationship  
Tried to “get back” at me by making me feel guilty or jealous  
Increased affection towards me  
Confronted person he/she was jealous about (“jealousy target”)  
Spied, snooped, or kept tabs me  
Was violent towards objects  
Other (specify)  
None of the above

Which of the following was the most characteristic way your partner expressed jealousy?

**Action**

es

Showed his/her negative feelings through body language  
Calmly talked with me about his/her feelings  
Verbally confronted me in an aggressive way  
Physically threatened or harmed me  
Avoided me/decreased communication  
Threatened to end the relationship  
Tried to “get back” at me by making me feel guilty or jealous  
Increased affection towards me  
Confronted person he/she was jealous about (“jealousy target”)  
Spied, snooped, or kept tabs me  
Was violent towards objects  
Other (specify)  
None of the above

## Questions About You

At the time of the jealousy incident, how much of your free time was spent doing things or communicating with your partner? (*Togetherness/communication- may mitigate long-distance/geographically close relationship status*)

1	2	3	4	5
None	A Little	Some	Quite a Bit	All

At the time of the jealousy incident, how open were you about the activities you participated in and the people you interacted with while apart from your partner? (*openness/transparency*)

1	2	3	4	5
Not Very Open	A Little Open	Moderately Open	Pretty Open	Extremely Open

At the time of the jealousy incident, how committed were you to your partner? (*commitment-individual*)

1	2	3	4	5
None	A Little	Some	Quite a Bit	Completely

At the time of the jealousy incident, if you were single, how easy would it have been for you to have attracted another romantic partner? (*relationship alternatives*)

1	2	3	4	5
Very difficult	Somewhat difficult	Neither easy nor difficult	Somewhat easy	Very easy

At the time of the jealousy incident, how emotionally close did you feel to your partner? (*closeness*)

1	2	3	4	5
Not at all close	A little close	Somewhat close	Pretty close	Very close

At the time of the jealousy incident, how much did you trust your partner? (*trust*)

1	2	3	4	5
Not at all	A little	Somewhat	Pretty much	Very much

At the time of the jealousy incident, how satisfied were you with your relationship with your partner? (*relationship satisfaction*)

1	2	3	4	5
Not At All	A Little	Somewh at	Mostly	Comple tely

Within your social circle, how often do you think jealousy motivates conversations or actions of group members? (*jealousy social norms*)

1	2	3	4	5
Never	Seldom	Sometim es	Often	Very Often

### Questions About the Jealousy Target

The following section asks questions about the **individual whom your jealousy was targeted towards** (the “jealousy target”) during your jealousy experience.

The sex of the jealousy target was: (*identity of interloper*)

- Male
- Female

What was the sexual orientation of the jealousy target? (*potential as romantic/sexual threat*)

- Heterosexual
- Homosexual
- Bisexual
- Don't know

At the time of the jealousy incident, was the jealousy target involved in an exclusive romantic relationship? (*potential as romantic/sexual threat*)

- Yes
- No
- Don't know

How did your partner know the jealousy target? (*identity of interloper*)

- Same-sex friend
- Cross-sex friend
- Former romantic partner
- Co-worker
- Family member
- Acquaintance
- Other (specify) \_\_\_\_\_
- Did not know jealousy target (*skips next two questions*)

At the time of the jealousy incident, how long had your partner known the jealousy target? (*newness of partner's relationship with interloper*)

Please indicate the amount of overlap between **your partner's** social circle and the **jealousy target's** social circle. (*partner's relationship embeddedness with interloper*)



At the time of the jealousy incident, how well did you know the jealousy target? (*individual's level of knowledge of interloper*)

- |            |                 |                     |                |              |
|------------|-----------------|---------------------|----------------|--------------|
| 1          | 2               | 3                   | 4              | 5            |
| Not at all | A little<br>bit | Moderat<br>ely well | Pretty<br>well | Very<br>well |

If known at all,

At the time of the jealousy incident, how long had you known the jealousy target? (*individual's length of relationship with interloper*)

Did you meet the jealousy target:

- Through your partner
- Independently of your partner

Did you include the jealousy target in the concentric circle representation of **current important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

- Yes
- No

If yes, what circle did the jealousy target fall in?

- Closest
- Second closest
- Third closest
- Fourth closest

Did you include the jealousy target in the concentric circle representation of **future important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

- Yes
- No

If yes, what circle did the jealousy target fall in?

- Closest
- Second closest
- Third closest
- Fourth closest

At the time of the jealousy incident, if you and your partner both knew the jealousy target:

Who knew the jealousy target first? (“ownership”)

- Me
- My partner
- Met at the same time

Who was closest to the jealousy target? (*closeness*)

- Me
- My partner
- We are equally close

If your relationship with your partner were to have ended at the time of the jealousy experience, who would have remained closer to the jealousy target? (“ownership”)

- Me
- My partner
- We would be equally as close/equally not as close

At the time of the jealousy incident, please indicate the amount of overlap between **your** social circle and the **jealousy target’s** social circle. (*relationship embeddedness with jealousy target*)



At the time of jealousy incident, what traits did you most value in yourself (for example, intelligence, physical attractiveness, etc)? For each trait endorsed, please indicate whether you thought, at the time, that you or the jealousy target possessed more of this trait. (*Domain-specific self-worth*)

Trait

- You Jealousy Target
- You Jealousy Target
- You Jealousy Target
- You Jealousy Target

At the time of the jealousy experience, what traits did your partner value most in a romantic partner? For each trait endorsed, please indicate whether you thought that you or the jealousy target possessed more of this trait. (*Domain-specific relational worth*)

Trait

- You Jealousy Target
- You Jealousy Target

You Jealousy Target  
You Jealousy Target

Did your partner share something unique with the jealousy target that is not something that you and your partner shared? (*uniqueness of interloper*)

If so, what?

Shared past experience(s)  
Shared current experience(s)  
Shared cultural background  
Shared personality traits  
Other (specify) \_\_\_\_\_

### Questions About the Jealousy Incident

The following section includes follow-up questions about the jealousy **incident**. Please answer according to how things were during the time you experienced the jealousy incident.

To what degree did your partner's relationship with the jealousy target result in a loss or diminishment of your relationship with your partner? (*severity of threat*)

1	2	3	4	5
Not At	Very	Somewh	Significa	A Great
All	Little	at	nt Amount	Deal

How likely is it that if another person were in this situation, he or she would feel the same intensity of jealousy you just described? (*"realness" of threat- comparison of level of felt jealousy to external standard*)

1	2	3	4	5
Very	Somewh	Neither	Somewh	Very
Unlikely	at Unlikely	unlikely or likely	at Likely	Likely

2. Think of a time while you've been at Duke that you felt jealous in a **friendship**: a same-sex or cross-sex friendship. By jealousy, we mean a negative reaction to your friend's **interest in, or relationship with, another person**. Jealousy does **NOT** include being envious, or wanting what another person has. Remember, this incident must have been during college.

Please describe this jealousy experience in the space below.

[ ] I have not had a friendship jealousy experience while at Duke. (skips to second part of study)

The following questions will ask for more information related to the experience you have described. Please answer the questions below as completely as possible, even if your description covers similar information.

The type of friendship described above can best be described as a:

- Same-sex Friendship
- Cross-sex Friendship

How long ago did this jealousy incident occur?

At the time of the jealousy incident, how long had you been friends with this person? Please answer in years and months. (*newness of relationship*)

How did you become aware of the jealousy incident you described? (*openness vs. hidden- may affect certainty, trust, in partner and/or relationship*)

- It happened while I was present
- My friend told me about it, unprompted
- My friend told me about it, after I asked
- I heard about it through another friend
- I heard about it through an acquaintance
- I discovered it accidentally
- I discovered it after checking up on my friend
- Other (specify) \_\_\_\_\_

What emotions did you feel during the jealousy incident? Please describe all the emotions you had during this time.

During the jealousy incident, how intense were your feelings of jealousy? (*level of felt jealousy*)

- |      |         |         |            |         |
|------|---------|---------|------------|---------|
| 1    | 2       | 3       | 4          | 5       |
| Very | Somewh  | Moderat | Somewh     | Very    |
| Mild | at mild | e       | at intense | intense |

Now, please tell us, at the time of the jealousy incident, how **much** of each of the following emotions did you feel?

- |        |   |   |   |   |
|--------|---|---|---|---|
| Anger: |   |   |   |   |
| 1      | 2 | 3 | 4 | 5 |



None	Little	Some	A Moderate Amount	A Lot
Sadness:				
1 None	2 Little	3 Some	4 A Moderate Amount	5 A Lot
Fear:				
1 None	2 Little	3 Some	4 A Moderate Amount	5 A Lot
Embarrassment:				
1 None	2 Little	3 Some	4 A Moderate Amount	5 A Lot

What were you thinking at the time of the jealousy incident? Please describe all the thoughts you had during this time.

What led to the jealousy incident occurring?

How much **responsibility** do you think the following people had in **causing** the jealousy incident to occur? (*Attributions- causality, control, intent*)

Your friend:				
1 None	2 Little	3 Some	4 A Moderate Amount	5 A Lot
You:				
1 None	2 Little	3 Some	4 A Moderate Amount	5 A Lot

The jealousy target:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate Amount	

How much **control** over the situation did the following people have during the jealousy incident?

Your friend:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate Amount	

You:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate Amount	

The jealousy target:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate Amount	

How much **intention** of causing jealousy do you think the following people had in participating in the jealousy incident?

Your friend:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate Amount	

The jealousy target:

1	2	3	4	5
None	Little	Some	A	A Lot
			Moderate Amount	

Was there anything you could have done to have prevented and/or stopped the incident from happening?

Yes  
No

Please describe why you could or could not have prevented and/or stopped this incident.

Did your friend do anything that violated the “rules” of your friendship?

Yes

No

If yes, what did your partner do?

If no, why wasn't this a violation?

What was it about this incident that bothered you the most?

How did you handle the situation?

How did you feel about how you handled the situation?

Please check all behaviors that you engaged in. (*type of jealousy expression*)

**Action**

Calmly talked with my friend about my feelings

Verbally confronted my friend in an aggressive way

Physically threatened or harmed my friend

Showed my negative feelings through body language

Tried to “get back” at my friend by making him/her feel guilty or jealous

Spied, snooped, or kept tabs my friend

Avoided/decreased communication

Threatened to end the friendship

Ended the friendship

Increased affection towards my friend

Calmly talked to jealousy target about my feelings

Aggressively confronted jealousy target

Spied, snooped, or kept tabs on the jealousy target

Other (specify)

Please indicate which of these behaviors is your most characteristic response to jealousy.

**Action**

- Calmly talked with my friend about my feelings
- Verbally confronted my friend in an aggressive way
- Physically threatened or harmed my friend
- Showed my negative feelings through body language
- Tried to “get back” at my partner by making him/her feel guilty or jealous
- Spied, snooped, or kept tabs my partner
- Avoided/decreased communication
- Threatened to end the friendship
- Ended the friendship
- Increased affection towards my friend
- Calmly talked to jealousy target about my feelings
- Aggressively confronted jealousy target
- Spied, snooped, or kept tabs on the jealousy target
- Other

Did you confide in anyone other than your friend about the jealousy incident? (*jealousy expression/support seeking*)

- Yes
- No

If yes, who? Check all that apply.

Family member 1	2	3	4 or more	
Same-sex friend1	2	3	4 or more	
Cross-sex friend	1	2	3	4 or more
Acquaintance	1	2	3	4 or more
Co-worker	1	2	3	4 or more
Other (specify)	_____			

Did your friend know you were jealous? (*jealousy expression*)

- Yes
- No

If no:

Why not? (*norms regarding appropriateness of jealousy expression*)

If yes:

How did your friend know you were jealous?

What did your friend do in response to learning you were jealous? (If responded yes to “did your friend know you were jealous?)

Please check all behaviors that your friend engaged in in response to learning you were jealous.  
(*actual response to jealousy expression*)

**Action Yes/No**

Provided comfort/reassurance

Apologized or promised to change behavior

Expressed negative feelings (ex-sadness, anger, upset, defensiveness)

Reacted violently towards you

Ignored or became distant

Threatened to end the friendship

Ended the friendship

Was violent towards objects

Other (specify)

Did nothing

Is there anything you wish your friend had done in response to learning that you were jealous that he/she did not do? (*ideal response to jealousy expression*)

Yes

No

If yes, what?

What, if any, was the resolution to the jealousy incident?

After the jealousy incident, how would you characterize how you felt about the relationship with your friend? (*relationship adjustment*)

1

2

3

4

5

Much More Negative	Somewh at More Negative	The Same as Before	Somewh at More Positive	Much More Positive
-----------------------	----------------------------	-----------------------	----------------------------	-----------------------

Please write why you would characterize your relationship this way following the jealousy experience.

After the jealousy incident, was there any change in your level of commitment to your friend?  
*(relationship adjustment)*

1 Much Less Committed	2 Somewh at Less Committed	3 The Same as Before	4 Somewh at More Committed	5 Much More Committed
-----------------------------	-------------------------------------	----------------------------	-------------------------------------	-----------------------------

After the jealousy incident, was there any change in your level of trust in your friend?  
*(relationship adjustment)*

1 Much Less Trusting	2 Somewh at Less Trusting	3 The Same as Before	4 Somewh at More Trusting	5 Much More Trusting
----------------------------	---------------------------------	----------------------------	---------------------------------	----------------------------

After the jealousy incident, was there any change in your level of satisfaction with your friendship?  
*(relationship adjustment)*

1 Not At All	2 A Little	3 Somewh at	4 Mostly	5 Comple ely
--------------------	---------------	-------------------	-------------	--------------------

Are you still in the friendship described in this jealousy experience? *(friendship status)*

Yes  
No

If yes- How long have you been in this friendship? Please answer in years and months.  
*(relationship length)*

If no- How long did this friendship last? Please answer in years and months.  
*(relationship length)*

If not, how much did jealousy contribute to the ending of this friendship? *(is relationship status related to jealousy)*

1	2	3	4	5
---	---	---	---	---

Not At All	A Little	Some	A Good Deal	A Lot
---------------	----------	------	----------------	-------

Did anything positive result from this jealousy incident?

Yes  
No

If yes, what?

Please indicate if any of the following positive outcomes occurred. Check all that apply.

**Action**

**es**

- Enhanced communication with friend
- You reached out to others/developed interest in others (besides friend)
- You tried to improve yourself
- You showed your friend how much he/she meant to you
- You renegotiated the “rules” or expectations of your friendship
- Other (specify)

If something like this happened again, would you handle it in the same way?

Yes  
No

If no, what would you have done differently?

How confident do you feel that you could effectively handle other incidents like this in the future?

1 Not At All	2 A Little	3 Some	4 A Good Deal	5 A Lot
--------------------	---------------	-----------	---------------------	------------

Overall, what did you take away from this experience? What were the lessons learned?

How do you think this jealousy incident has affected your approach to future relationships?

How much do you think your past jealousy experiences have impacted how you approach current or future relationships or close friendships? (*relationship history- past jealousy experiences*)

1	2	3	4	5
None	Little	Some	Much	Very Much

Over the course of your friendship, did anything like this jealousy incident happened before?

Yes  
No

If yes, please briefly describe what happened.

Over the course of your relationship, had anything like this jealousy incident happened after?

Yes  
No

If yes, please briefly describe what happened.

Overall, how **intense** were your feelings of jealousy during this friendship? (*level of felt jealousy*)

1	2	3	4	5
Very Mild	Somewh at mild	Moderat e	Somewh at intense	Very intense

Generally, among all your close relationships, how **intense** are your feelings of jealousy?

1	2	3	4	5
Very Mild	Somewh at mild	Moderat e	Somewh at intense	Very intense

Overall, how **frequently** did you feel jealousy in this friendship? (*frequency of jealousy in relationship*)

1	2	3	4	5
Never	Seldom	Sometim es	Often	Very Often

Generally, among all your close relationships, how **frequently** do you experience jealousy?

1	2	3	4	5
---	---	---	---	---



Never

Seldom

Sometimes

Often

Very Often

### Questions About Your Friend

At the time of the jealousy incident, was your friendship long-distance (meaning it would be very difficult or impossible to see your friend every day)? (*type of friendship- long distance vs. geographically close*)

Yes

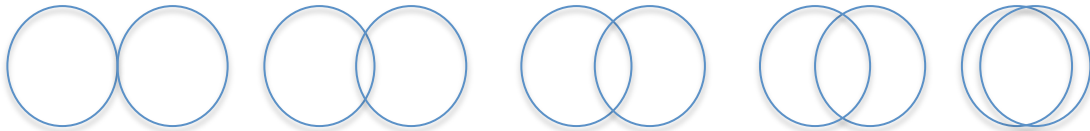
No

At the time of the jealousy incident, did you have romantic or sexual feelings for your friend? (*type of friendship- platonic or romantic*)

Yes

No

At the time of the jealousy incident, please indicate the amount of overlap between **your** social circle and **your friend's** social circle. (*relationship embeddedness with friend*)



Did you include this friend in the concentric circle representation of **current important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

Yes

No

If yes, what circle did this friend fall in?

Closest

Second closest

Third closest

Fourth closest

Did you include this friend in the concentric circle representation of **future important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

Yes

No

If yes, what circle did this friend fall in?

Closest

Second closest

Third closest

Fourth closest

Overall, how intense were your friend's feelings of jealousy during this friendship? (*friend's level of felt jealousy*)

1	2	3	4	5
Not At All/Very Mild	Somewh at mild	Moderat e	Somewh at intense	Very intense

Overall, who felt more intense jealousy in this friendship? (*level of match of felt jealousy*)

1	2	3	4	5
Exclusiv ely my friend	More my friend than me	Friend and self equally	More me than my friend	Exclusiv ely me

Overall, how frequently did your friend feel jealousy in this relationship? (*friend's level of jealousy frequency*)

1	2	3	4	5
Never	Seldom	Sometim es	Often	Very Often

Overall, who felt more frequent jealousy in this relationship? (*level of match of jealousy frequency*)

1	2	3	4	5
Exclusiv ely my friend	More my friend than me	Friend and self equally	More me than my friend	Exclusiv ely me

(If friend felt some amount of jealousy): During this relationship, did you know when your friend was jealous? (*openness of jealousy experience/expression*)

Yes  
No

How did your friend typically express jealousy in this friendship? Check all that apply.  
(*Level of experienced jealousy and type of match between friend and self; expression of jealousy*)

**Action**

- Showed his/her negative feelings through body language
- Calmly talked with me about his/her feelings
- Verbally confronted me in an aggressive way
- Physically threatened or harmed me
- Avoided me/decreased communication
- Threatened to end the friendship
- Ended the friendship
- Tried to "get back" at me by making me feel guilty or jealous
- Increased affection towards me

- Confronted third party (“jealousy target”)
- Kept tabs me
- Was violent towards objects
- Other (specify)
- None of the above

Which of the following was the most characteristic way your partner expressed jealousy?

- Action
- Showed his/her negative feelings through body language
  - Calmly talked with me about his/her feelings
  - Verbally confronted me in an aggressive way
  - Physically threatened or harmed me
  - Avoided me/decreased communication
  - Threatened to end the friendship
  - Ended the friendship
  - Tried to “get back” at me by making me feel guilty or jealous
  - Increased affection towards me
  - Confronted third party (“jealousy target”)
  - Kept tabs me
  - Was violent towards objects
  - Other (specify)
  - None of the above

**Questions About the Jealousy Target**

*The following section asks questions about the **individual that you were jealous about** (the “jealousy target”) during your jealousy experience.*

The jealousy target was:

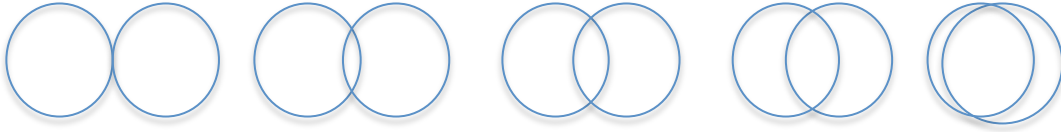
- Male
- Female

How did your friend know the jealousy target? (*identity of interloper*)

- Same-sex friend
- Cross-sex friend
- Former romantic partner
- Current romantic partner
- Co-worker
- Family member
- Acquaintance
- Other (specify) \_\_\_\_\_
- Friend did not know the jealousy target (*skip next question*)

At the time of the jealousy incident, how long had your friend known the jealousy target? Please answer the best you can in years and months. (*friend’s length of relationship with interloper*)

Please indicate the amount of overlap between **your friend's** social circle and the **jealousy target's** social circle. (*friend's relationship embeddedness with interloper*)



At the time of the jealousy incident, did you know the jealousy target? (*known to individual?*)

- Yes
- No

If yes, how do you know the jealousy target?

- Same-sex friend
- Cross-sex friend
- Coworker
- Family member
- Acquaintance
- Roommate
- Other \_\_\_\_\_

At the time of the jealousy incident, how long had you known the jealousy target? Please answer in years and months. (*individual's length of relationship with interloper*)

Please indicate the amount of overlap between **your** social circle and the **jealousy target's** social circle. (*relationship embeddedness with jealousy target*)



Did you include the jealousy target in the concentric circle representation of **current important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

- Yes
- No

If yes, what circle did the jealousy target fall in?

- Closest
- Second closest
- Third closest
- Fourth closest

Did you include the jealousy target in the concentric circle representation of **future important relationships** you just completed in the beginning of this study? (*level of closeness to individual*)

Yes  
No

If yes, what circle did the jealousy target fall in?

Closest  
Second closest  
Third closest  
Fourth closest

### **Questions About the Jealousy Incident**

*The following section includes follow-up questions about the jealousy **incident**.*

At the time of the jealousy incident, what was your level of satisfaction with your friendship?  
(relationship satisfaction)

1	2	3	4	5
Not At	A Little	Somewh	Mostly	Comple
All		at		ely

### **Positive Peer Experience**

*Think of a time while you've been at Duke that you have had a positive experience in a close relationship. This could be a romantic relationship, a same-sex friendship, or a cross-sex friendship.*

*Please briefly describe this positive experience in the space below.*

*What made this experience so positive for you?*

A survey like this can't cover everything. Is there anything else you'd like to add?

THANK YOU SO MUCH FOR YOUR PARTICIPATION!

You will receive one credit of psychology department credit (*will read \$12 for DIISP lab participants*). We will now ask for your name in order to credit you for your participation. Your survey responses and your name will be stored separately from your survey responses and your name will be deleted following completion of the study.

If answering any of these questions has upset you or caused you any distress, we encourage you to contact your local health provider or you can visit the National Alliance on Mental Illness website at [www.nami.org](http://www.nami.org) for additional information to locate a mental health provider in your area.

One local mental health resource is the Duke Psychology Clinic. Located in the Duke Psychology and Neuroscience Department, the clinic offers low cost psychotherapy on a short-term and long-term basis conducted by advanced clinical psychology graduate students. Please contact the clinic coordinator at 919-660-5771 for more information.

You can also contact Duke REACH, a University resource for mental and physical health: [online](#), or by calling 919-668-3853.

For more information, or if you have questions about any part of this study, please contact the primary researcher: Katrina Poetzl, M.A. Email: [katrina.poetzl@duke.edu](mailto:katrina.poetzl@duke.edu). Phone: 919-660-5689.

# Appendix B

## Coding Manual for Selected Open-Ended Questions

### I. Jealousy Experience- Please briefly describe this experience in the space below.

#### 1. Relationship context

Jealousy was reported in a range of relationship contexts. This code determines, “What is the relationship between the individual and the friend/partner?” (*note: evaluate this at the time of the jealousy incident*)

1. Never had a relationship with the person of interest  
Had a crush on/liked from afar
2. Has some relationship with the other person  
Casual relationship partner/hook-up  
Casual friendship  
Like each other, but relationship is on “hold” (e.g., partner abroad)
3. Had ongoing with friend/partner at time of the jealousy incident  
In romantic relationship  
In friendship
4. Post-relationship  
Had a relationship with the friend/partner in the past, but was not in a current relationship with this person at the time of the jealousy incident  
Exes  
Former friends

\*In cases where the story is about a friend who is also a crush, code for what they emphasize. The default is coding for a crush (2), but if they emphasize the friendship as the valued relationship, code 3. In that case, the friendship is nonambiguous.

#### 2. Reasonableness of threat

This code aims to capture the continuum between real/potentially real jealousy threats vs. jealousy threats with no basis in reality.

***Reasonable jealousy*** : a realistic response to a real or likely threat

***Unreasonable jealousy***: a reaction to imagined threats, paranoid suspicions, overreactions to ambiguous stimuli, or jealousy in a situation where the individual has no claim on the friend/partner.

When thinking about the jealousy threat, ask:

*How much does it threaten the relationship ending or diminishing in quality?*

- a) The threat could stem from the friend/partner's actions

Examples: A friend starts hanging out with new group of friends and ignores the individual  
Partner texts their ex

- b) The threat could stem from another person's actions toward the friend/partner

Example: A girl comments on partner's FB picture

In a situation where there are friendship and romantic relationship feelings, go with what the participant talks about (if not stated, assume they are referring to the romantic/crush feelings)

1. No articulated threat: Jealousy for no apparent reason or jealousy out of the context of a relationship

Examples:

"Someone talked to my boyfriend"

minor "offense"- not a reasonable response

"My friendship with a same-sex friend ended and I was jealous of his relationship with another close same-sex friend"

the friendship is already over when the ex-friend has become close with another person- this relationship has not impacted the dissolution of the friendship between the individual and the (ex) friend

"My girlfriend is lab partners with another guy and it makes me jealous"

"Other friend joining a new fraternity"

2. Little/Some cause for concern, but no outright violation of relationship rules

\*NOTE: Unless the threat is trivial, all stories about a crush are coded here (2)

Examples:

"She was texting her ex-boyfriend a lot"

"He was being flirtatious with other girls"

"My hookup partner whom I liked hooked up with someone else"

"My friend was hanging out with another friend more than she was hanging out with me"

"I am jealous of his ex and their history"

3. Clear violation of rules/objective outsiders would likely agree jealousy threat is real

Examples:

"He slept with someone else while we were exclusive"

"I felt jealous that this new friend was able to replace me and remove me from the group"



replacement rather than an addition (within a friendship)

### 3. Reason for jealousy

Jealousy can have a number of root causes. This code gets at what the individual identifies or hints at as a reason for his or her jealousy.

#### 1. Possessiveness

The reason behind the jealousy is that the friend/partner has a relationship with another person. Basically, jealousy stems from the fact that the sought-after person is “not mine”. The individual hints at wanting to keep the friend/partner for him or herself.

The individual can feel possessive of someone they are currently in a relationship with, or someone they don't have a current relationship with (ex- a crush or an ex)

All crushes are coded here, since the lack of an established relationship means that this relationship isn't technically eligible for worry or relationship loss (below)

#### Examples

“I knew that an ex-girlfriend was spending time with another guy she liked.”

“It was very hard to come to terms with the fact that he did not see me as more than a friend”

“Even though I have a boyfriend I am very jealousy that my guy friend is in a relationship because I like having a lot of my male friend's attention”

“I kept thinking, “hey she's MY friend!”

“ Even though I have broken up with my former boyfriend, I still get incredibly jealous when I see pictures of him with another girl on FB”

“I tend to be somewhat possessive of my friends when they start spending large amounts of their time with other friends.”

“I wasn't with her and was jealous looking at all the pictures of her having fun with her other friends”

“I was worried that he thought she was prettier than me”

#### 2. Worry

The reason behind the jealousy is a worry about the loss or diminishment of relationship rewards, such as time, attention, trust, intimacy, emotional closeness/growing apart. This code only applies to a relationship that is current at the time of the jealousy incident.

#### Examples

“I feel jealous when my friends share some secret between them and do not tell me anything about it”

“A friend of mine was spending more time with her new friends”

“I thought this other guy was cool but I started to feel jealous that he was taking my place as my roommate’s best friend”

“My hookup partner lied to be about not being involved with anyone else”

\* If there are possessive and worry themes, code worry because worry can have possessive elements but also has more than pure possessiveness.

### 3. Relationship Loss

Jealousy stems from the circumstances surrounding a friendship/relationship ending.

#### Examples

“My best friend from high school went to a different college than I did. After sophomore year we drifted apart. He became better friends and shared more experience with his new friends at college.”

“My guy friend and I were very close, but then he got a girlfriend who was jealous of me and he cut back on time with me because he felt bad for her. Our friendship basically ended.”

### 4. Not enough information/unclear

#### Example

“Other friend joining a new fraternity”

\* If unclear between worry and possessive, go with what is actually stated. If unclear because no information, then go with 4.

#### DOUBLE CODE:

If the story is a **romantic relationship** story, the following code should be completed:

### 4. Sexual threat

Past studies have shown that with adults, men feel more sexual jealousy than women. I am interested in seeing if this is evident in our sample. The following code asks for a yes/no response to the question:

“Is the jealousy threat sexual in nature?”

1) Sexual

- Mentions sex, hookups, kissing, touching, wanting, cheating
  - “He would try and be close with her- such as hand on her hips, hugging on the bus, etc.”
  - “I clearly wanted her, even though I felt bad she was already in a committed relationship.”
  - “My girlfriend had been acting distant and called me a few days later and apologized for cheating on me with one her guy friends.”
- Does not have to specifically state that the jealousy stemmed from sexual activity, can be inferred if sexual activity is mentioned
  - e.g. “She had a casual hookup with someone I disliked”

If the story is a **cross-sex friendship** story, the following code should be completed:

**5. Sexual content**

The purpose of this code is to determine if the event prompting the jealousy story reported has is sexual in nature (vs. platonic or emotional).

1) **Yes:** Sexual

- Mentions sex, hookups, kissing, touching, wanting, cheating
  - “He would try and be close with her- such as hand on her hips, hugging on the bus, etc.”
  - “I clearly wanted her, even though I felt bad she was already in a committed relationship.”

If the story is a **friendship (cross-sex or same-sex)**, the following code should be completed:

**6. Jealousy target: One or many?**

The purpose of this code is to determine if the jealousy target is one person (i.e. a specific other person) or a group (e.g., a fraternity, a group of girls, etc).

1. One
2. Many

**II. (Did you confide in anyone other than your partner about the jealousy incident?) Why or why not?**

This code is designed to help better understand the norms surrounding whether the individual confides in others (besides he friend/partner). These norms provide descriptive data on what factors lead an individual to confide in others or not.

Can code multiple items if more than one reason was mentioned in the response. Then, in second coding column, code only the predominant theme if two or more themes are mentioned. Predominance can be determined by the most developed theme, or in the case of equally developed themes, the first theme mentioned.

Did not confide:

- 1) No one could help/Didn't have anyone to talk to
  - a. Ex- Was the first week of school, didn't have any close friends yet.
- 2) Embarrassed to admit/Felt it was irrational
  - a. Ex- I'm not proud of it.
- 3) Not a big deal- no need
  - a. Ex- Didn't feel the need- it was such a minor problem.
- 4) Preferred to handle it alone
  - a. Ex- I don't like bothering other people with my issues.
- 5) Preferred to handle it with partner/friend only
  - a. Ex- Wanted to deal with it with my girlfriend directly
- 6) Unclear/Other

Did confide:

- 7) Help/Advice (Needed help figuring out a solution)
  - a. Ex- Wanted an outsider's opinion.
- 8) Support/Venting/Empathy (Needed emotional support, not instrumental aid)
  - a. Ex- My friends would be understanding.
- 9) Soundingboard (Had an action plan, wanted to run it by people)
  - a. Ex- Wanted assurance I was doing the right thing.
- 10) Casual conversation (Didn't want anything from the discussion, just came up in casual conversation)
  - a. "Told my parents because we were talking my housing situation."
- 11) Unclear/Other

### **III. (Did your partner/friend know you were jealous?) Why not?**

This code is designed to better understand why an individual might keep jealousy information from their friend/partner. These reasons provide descriptive data on the factors that lead to an individual not confiding their jealous feelings to their friend/partner.

- 1) Jealousy was inappropriate (didn't have a relationship with the other, e.g., crush, or jealousy goes against the mutual understanding of the friendship/relationship, e.g., cross-sex friendship or non-exclusive romantic relationship)
  - a. Ex- She had no idea I liked her at the time.
- 2) Jealousy would negatively impact friendship/relationship
  - a. Ex- Didn't want to make it awkward.
  - b. Ex- Was worried that she would freak out.
  - c. Ex- It would have put a strain on our relationship.
- 3) Own issue/didn't want to hurt friend/partner (friend/partner didn't do anything wrong, jealousy is related to individual's own insecurities)
  - a. Ex- It was all due to my crazy emotions.

- b. Ex- From his end, he didn't do anything wrong.
- c. Ex- Didn't want to make her feel bad about falling in love with her boyfriend- I wanted her to be happy.
- d. Ex- It was a personal issue.
- 4) Deliberately hid feelings
  - a. "I wasn't going to let her know she played me."
  - b. "I covered my feelings well."
  - c. "I acted nonchalant even though I felt jealous."
- 5) Not a big deal/Not worth it
  - a. Ex- Not important enough.
  - b. Ex- Wouldn't have changed anything, not worth the trouble.
- 6) No reason given/Don't know/Unclear/Other (Some answers don't make sense because they don't answer the question or refer to something you can't discern from only looking at this response).
  - a. Ex- "Didn't tell" (no other info stated)
  - b. Ex- "I don't know"

#### **IV. How did your partner/friend know you were jealous?**

This code is designed to better understand the roots of how the friend/partner becomes aware of the individual's jealousy. These categories of behavior provide descriptive data on the factors that lead to the friend/partner's discovery of an individual's jealousy.

Direct vs. indirect

- 1) Told friend/partner
- 2) Friend/partner figured it out
  - a. by non-verbal cues, like body language
  - b. by verbal cues like tone of voice or repeated asking about jealousy target
  - c. distanced myself
- 3) Someone else told friend/partner
- 4) I don't know/unclear

#### **V. Overall, what did you take away from this experience? What were the lessons learned?**

- a. The purpose of this code is to provide information about what participants take from this experience and carry forward into future relationships (a measure of internal working models). In addition, this code identified targets for interventions aimed at reducing jealousy or preventing its occurrence.

To do this, the stories are coded for attributional style (self vs. others). Stories are further differentiated.

For lessons about self, stories either involve wanting to change future behavior (withdrawal vs. openness) or merely learning something about oneself. For stories about others, stories are categorized into pessimistic vs. non-pessimistic stories.

The pessimism code is designed to capture individuals who may be at risk for future maladjustment.

Internal: Lesson about self: changes needing to be made in the future

1. Inward: Withdraw/protect self/be more careful/be more tempered
  1. Ex- "Think before you act."
  2. Ex- "Don't go too fast, be careful."
  3. Ex- "If he doesn't respect you, leave him."
  4. Ex- "I need to be less intense and not always act on my emotions."
  5. Ex- "Don't snoop on FB"
2. Outward: Open up/put yourself out there more/be more active rather than passive
  1. Ex- "Communicate more"
  2. Ex- "Be more vocal and passionate."
  3. Ex- "I need to show my emotions more so he knows its serious."
  4. Ex- I need to be more trusting.
3. No changes necessary (ie- Realization about self)
  - a. "I can be kind of crazy in relationships."
  - b. "I'm pretty good at relationship."

External: Lesson about others

4. Reflection
  1. Ex-"When I find the right girl she will value me"
  2. Ex- "We are just different people who react to things differently."
5. Blame
  1. Ex-"Don't trust hos"
  2. Ex- "Guys can make girls act weird."
  3. Ex- "People don't always get what they deserve."
6. Situational Factors (not really about self or other people)
  - i. Ex- "Long distance is hard."
  - ii. Ex- "Life goes on."
6. Other/no lesson

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## **Biography**

Katrina Poetzl Blomquist was born on August 8th, 1982 in Binghamton, New York. She received a B.S. in Human Development from Cornell University in 2004. From 2004-2006, Katrina worked as a clinical research assistant in the Pediatric Psychopharmacology Department of Massachusetts General Hospital in Boston, Massachusetts. In the fall of 2006, Katrina began her doctoral studies and training at Duke University in Child Clinical Psychology and received her M.A. in 2011. She was awarded the Sulzberger-Levitan Social Policy Graduate Research Fellowship through the Center for Child and Family Policy at Duke University. Additionally, Katrina received the Duke Education Policy Research Certificate and the UNC-Duke Collaborative Graduate Certificate in Developmental Psychology. During the 2013-2014 year, Katrina has been on internship at the University of Washington Medical Center/Seattle Children's Hospital program. Next year, Katrina will be completing a postdoctoral fellowship at focusing on childhood anxiety at the Evidence Based Treatment Center of Seattle.